

# 1º Edition

Title: Hydroelectric Power Plant and Corruption The struggle to save the Tibagi River and one of the last forests in South Brazil

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*“I don't like the ideal of life held by those who think that the normal state of human beings is to fight to progress; that the trampling, crushing, elbowing and stepping on each other's heels... is the most desirable*

*destiny of the human species. ” John Mill, 1806-1873*

*Art. 225: Everyone has the right to an ecologically balanced environment, an asset for common use by the people and essential to a healthy quality of life, imposing on the Public Power and the community the duty to defend and preserve it for the present and future generations. (Brazilian Federal Constitution of 1988)*

*Dedication*

Bianca Luiza Reinert  
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Reinhard Maack

# Hydroelectric Power And Corruption in brazil

The fight to save the Tibagi River and one of the last  
forests in the South Brazil

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# Introduction

## **Mauá hydroelectric plant in Tibagi . The story and the destruction of a river and the last forests of South Brazil**

This book aims to perpetuate the history of environmental achievements carried out by the environmentalist organization *Liga Ambiental* and a group of citizens from the State of Paraná. This publishing shows a timeline with the main events to protect this natural heritage, as well as those destined to destroy the Tibagi River. These moments were compiled and arranged chronologically from information collected in technical books, scientific publications, history books, journalistic publications, legal material and testimonials from two important actors in this succession of events, Tom Grando and Rafael Filippin.

## **Water**

Just over 70% of the Earth's surface is covered by water. Most of that volume is in the seas. Fresh water accounts for only 3% of all existing water. Of that tiny fraction, two-thirds are frozen at the poles. Leaving the modest amount of 1% of the precious liquid available for human needs, which is sparsely distributed in the waters of rivers, lakes and underground aquifers. Brazil has about a tenth of the fresh water of rivers on the planet, not counting groundwater, especially from the Guarani Aquifer, as far as is known, the largest source of fresh water on the planet. According to the United Nations (UN), approximately 70% of Brazilian rivers are contaminated by industrial, domestic and

agricultural waste. A survey carried out by *SOS Mata Atlântica* revealed that the water quality of rivers, streams and lakes in Brazil was classified as bad or very bad in 36.3% of the evaluated collection points. The classification was regular in 59.2% of the samples and good in only 4.5% of them. The study analyzed water samples collected from 289 points in 183 rivers, streams and lakes distributed in 76 municipalities in 11 Brazilian states. The collections were made between March 2015 and February 2016.

The destruction of springs and our rivers is accelerated and, in a few years, part of this great wealth will be disfigured. Degraded riparian forests and forests, rivers surrounded by large farms or dammed in dams have been the legacy of the culture of fully exploiting the resources that nature took millions of years to build.

And approximately 70% of the sewage collected is released in its raw state into our rivers. Today, clean water is a scarce natural resource in Brazil and Paraná (except the Amazon). The rapids of socio-environmental damage caused by the scarcity of water with quality for human use, entails compromising the basic needs of society such as sanitation, agriculture, food, industrial processes, energy generation and leisure.

## The Tibagi River

The Tibagi River is part of the hydrographic system of the Paraná Basin. There are 65 main tributaries that add strength to the mighty waters of the main contributor to Paranapanema. The total of 24,000 square kilometers is the area drained by the Tibagi and its tributaries. In its bed there are 91 waterfalls and rapids. Its sources are located in Palmeiras, at an altitude of 1,150 meters, in the Campos Gerais region of Paraná. From there, the water stored in the sandstone rock of the first plateau of Paraná flows north for a length of 618 kilometers until it breaks towards its mouth, currently flooded by the Capivari dam. There, the waters of the Tibagi mix in the bed of the Paranapanema river and follow, in a long journey, towards the confluence with the Paranaíba River, which brings the waters of the central Brazilian plateau to the south. This communion of waters forms the mighty Paraná River. On the long journey towards the meeting with the Iguaçu River, the Paraná is fed by tributaries that flow from the Pantanal. The two giants

Paraná and Iguaçu, when they cross, flow and give birth to the colossal River Plate. This powerful flow of water that sustains countless living systems where it passes would be nothing without the contribution of the most tenuous streams in the most distant limits of the Brazilian territory. On the long journey to Paranapanema, the waters of the Tibagi drain countless ecosystems, irrigate extensive agricultural systems and provide water for 40% of the population of Paraná.

The geological history of Tibagi includes profound changes currently expressed by the geography of the gentle undulations that depart from the Devonian escarpment in a northerly direction to Pico Agudo, remnants of ancient tectonic works. "On the east and southwest edges, two phenomena considered more important occurred: the uplift and stacking of the Brazilian Plateau during the post-Cretaceous period, determining the general drainage direction of the Paraná basins, including the Tibagi" (Ab'Saber, 1968) . Its geological depths are heterogeneous, as well as the plant formations that have settled on its banks. Currently, its remnants of Natural Fields, Forest with Araucaria, Cerrados and Peroba Forest make up a rare mosaic of life among Brazilian rivers.

The first pre-Columbian populations took shelter in the Tibagi valleys and thrived there, privileged by the abundance of food, more than 10,000 years ago. Kaingang and Guarani indigenous peoples have colonized the region in recent millennia. 500 years ago a new wave of humans expanded into the continent in search of riches, they were the Europeans. In the first three centuries of occupation, many traveled along the Tibagi riverbed in search of precious metals such as diamonds and gold and all sorts of plant and animal products. That's when Tibagi entered to the colonial history. In the last centuries, famous naturalists traveled through its forests and fields, realizing the countless natural riches, while European settlers settled on the banks of the generous river. Currently, its waters feed more than four million people from Paraná, it is a fishing source for many communities, in addition to meeting the needs of small and medium-sized rural properties on its banks, it has average supply rates in its greatest extension, crossing areas of tourist interest. Indigenous peoples from southern Brazil also take refuge on its banks; and finally, it is recognized by science as one of the last areas of mega-biodiversity in the interior of the state of Paraná – along with the limited area of the Foz do Iguaçu

National Park and the Piquiri basin. The forest fragments in the Tibagi basin are among the last repositories of wildlife and native flora in Paraná. Its species diversity is one of the few guarantees for future repopulation projects in legal reserves and riparian forests for much of the interior of the state, which is currently in an advanced stage of degradation.

Tibagi was also an important means of settlement in the region, it played the important and historic role of integrating populations with great contributions such as river transport, economy, food, tourism and energy generation, and the most diverse benefits that a river provides for human quality of life. Its waters and the strips of forest that remain intact on its banks teach a lesson that the old Tibagi, a profuse river in rapids, is a valuable natural heritage.

## In Defense of Tibagi

This book tells the story of the attempt to destroy a Brazilian river, and the struggle of the *NGO Liga Ambiental* and citizens of Paraná who fight for justice for the use of water. Along the way, a tangle of events undertaken by electric energy agencies to deploy a sequence of large hydroelectric power plants on the Tibagi River is revealed – considered obsolete from the point of view of sustainability. This book exposes twenty years of Tibagi river history; profuse in illegal projects, according to Brazilian environmental legislation. This book is also a survival guide for social movements that fight to save Brazilian rivers.

Professionals in the field of law, political science, history, the environment and the curious will find here a tangle of facts that include adulterated documents, oppressive policies, illegal hiring and corruption in environmental agencies and government agencies for Mauá and other projects to get off the ground. In this process, the Minister of Mines and Energy, the governor, employees with positions of trust and the second echelon of the government of Paraná promoted numerous unconstitutional acts. Here is a recurrent formula in the country, and exposes the policies of the state that has an energy production surplus - Paraná produces 25% of Brazil's energy - and that deliberately used corrupt strategies to end the construction of the Mauá hydroelectric plant, a project which was seriously and honestly discussed and criticized by

scientists, representatives of civil society and finally rejected by people from Paraná and by technicians from state and federal institutions.

Curiously, the evidence presented in this book are not secret documents kept under lock and key, they are available on the internet, were published in newspapers, presented in public hearings and are included in the records of sixteen legal actions that were processed in the judiciary, seeking to compensate or avoid environmental damage. Therefore, the arguments presented here are evident and indisputable from both a legal and an ethical point of view.

The Tibagi has a history of connection between man and river, which insists on breaking the silence that has affected many Brazilian rivers. This book is a response to all these facts, it is a warning in defense of the most basic rights of the people of Tibagi, in the struggle to keep their waters from Tibagi free from large dams and protected as a natural monument.



*Tibagi Expedition 1926, Jaguatirica Rapids / Photo Reinhard Maack*

# chapter one

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## TIBAGI'S Divesion

## September 1, 2009

The entourage waited while the authorities looked at each other and smiled, some maintained a serious air. The difficulties faced in reaching that glorious moment gave way to pride in seeing yet another major development project come to fruition. From the top of a hill, the political body and businessmen could see the sharp curve of the Tibagi river, upstream of the Mauá waterfall. In this stretch, the Tibagi River faces a rare sequence of rapids. A dazzling and unknown natural spectacle, hidden in the backlands of Paraná.

At the end of the day, after greetings and hugs, this natural landscape, one of the last strong forest remnants in the interior of Paraná, would be disfigured and in two years destined to disappear from the map under the waters of the Mauá reservoir. Confirming the way progress is still seen, the cameras were waiting for the long awaited moment, the climax of the event was undoubtedly the trigger that would detonate 1,400 kilos of explosives, designed to open a diversion on the Tibagi River, and drain its waters through an almost two-kilometer-long adduction tunnel excavated in the rock. This stage is strategic for the continuity of construction. In a few moments, subtleties still unknown to man that mother nature took millions of years to build with care and patience would be summed up in rubble.

The entourage and guests eagerly awaited the show. There were more than one hundred people comfortably accommodated on the platform erected at the construction site of the Mauá hydroelectric plant. The governor of Paraná Roberto Requião was the host of bigwigs like the representative of Mines and Energy, Marcio Zimmermann, the president of Eletrobrás José Antônio Muniz, the president of Eletrosul Eurides Mescolotto and Jorge Miguel Samek, director of Itaipu

Binacional. Copel's president, Rubens Guilhardi, a confessed opponent of the actions of environmental movements, also presided over the event. Among others, less important figures were also present, such as mayors, councilors and local businessmen and other irrelevant people who usually just fill empty seats at political events. The show's producers announced the governor's speech. Requião got up with a sigh and spoke, drawing the audience's attention with his elegant posture and low, imposing voice, as usual. He praised the seriousness and competence of Paraná Energy Company (Copel). In his speech he included *"I have no doubt, as a Brazilian and not just as a person from Paraná, that Copel is today the best energy generation, transmission and distribution company in the country"*.

This was also a moment to emphasize, before the attentive eyes of journalists, the supremacy of these energy models and how they are inevitable for the so-called economic development – a formula that deals with profits and not with individuals. Zimmermann highlighted "Brazil only exploits 30% of its hydroelectric potential", referring mainly to projects for the occupation of preserved rivers

in the Pantanal of Mato Grosso and the Amazon, especially the Belo-Monte project, which at that time was in political negotiations.

With the long political speech over, the select group of bureaucrats and technocrats were finally able to appreciate the long-awaited moment. The explosion of gigantic proportions boomed accompanied by two columns of smoke dyed blue and orange, representing the colors of the Mauá hydroelectric plant. That was the official moment of victory. Requião and Rubens Guilhardi were unable to hide their happiness at the conquest, with relieved smiles. The construction site was already set up, the adduction canal drilled, lodgings, cafeteria, laundry, leisure area, electricity and lighting network, sewage and drinking water network, in addition to an effluent treatment plant. Several accesses were opened and assembled to the industrial site, containing a quarry, crushing plants, concrete manufacturing plants, cement storage silos, land disposal area and road scales.

The excavations of earth and rock in the open were practically completed, leaving the progress of the underground excavations. The powerhouse site was also already receiving concrete foundation. It is designed for the right bank of the Tibagi and will operate with three groups of turbines and generators.

Part of this huge structure had already been built for months and another part under construction. But the explosion symbolically sealed hopes for a legal and social battle that will last more than ten years. The long wait for justice perplexed environmentalists and defenders of minority groups who saw their expectations melt away along with the blue and orange smoke that gradually dissipated over the 85 square kilometers of forests and small properties that, in two years, would be flooded by dammed waters from Tibagi.



Explosão ... /

Ismair, the peasant, also watched the event, but far away. His eyes were filled with immense sadness as he walked across the Tibagi River to the banks of his rural property. The episode had a profound impact and, like a flash of lightning, brought to mind her life story, her achievements and the last years of struggle for his rights. Ismair looked at the horizon, at the blue sky, almost springtime, it was the first of September, he contemplated the clouds that moved slowly over the treetops and then slowly ran his gaze over the riparian forest, as if it were the last turn. Under the canopy of an enormous cedar, crouched, he touched the waters of the river gently with his hands, it took a deep sigh to get up. It was time to head back to his home in the woods. (UHE: hydroelectric plant)

# Bacia do Rio Tibagi



\* UHE: USINA HIDRELÉTRICA

## 1996 – The origin of the facts

On Thursday, January 19, 1996, Marcos Bornschein and Bianca Reinert, two experienced biologists specializing in birds, were slowly approaching a patch of grass and shrubs along a small pond, about ten meters in diameter, on the banks of the Tibagi River. It was late afternoon, the time of day when the birds appear. There the reflection of the setting sun glinted the turbulent movement that the waters of the turbulent river. Near its banks, small lagoons shimmered in the tenuous waters. Bornschein and Bianca knew they could find new bird records. At one point the researchers decided to do some playback of rarer birds. Playback is a technique in which the song of a bird is reproduced in order to attract or encourage it to sing. That way, even if researchers don't have visual confirmation, they can have auditory confirmation. Records like these are accepted by the scientific community for species identification, even if not recorded, as long as this type of observation is generated by renowned researchers. Other ways of identifying birds is through eye contact, often

done with the use of binoculars. The capture method with nets is also used by both, in which case after identifying the animals they are released into nature.

Marcos Bornschein moved cautiously as he performed the playback - with his two meters tall and prominent shoulder blade like a gladiator, Bornschein has the impressive ability to move through the foliage as silently as the very birds he studies. Bianca, who was walking in Marcos' shadow, suddenly froze her movements, the two looked at each other for a split second, at that moment the avifauna inventory completed a list of more than two hundred species of birds. A surprising number of records in a region of Paraná very pressured by human occupation, where the fauna does not seem to present such diversity.

The list of identified species grew, so did the expectation of finding rare species. Bornschein and Bianca's research was being carried out in a private reserve known as Mata Doralice. Although it was a small property on the banks of the middle Tibagi, it featured an unknown river with surprising biological diversity in Paraná, which is advancing towards the deforestation of its last forests. Biodiversity proved to be great not only in terms of known species, but also rare ones.

One of these rare and globally endangered species was under the attention of Marcos and Bianca was the Brazilian Merganser. The species had already been

recorded, in the 1980s, on the banks of the Tibagi by the ornithologist and professor at the State University of Londrina, Luiz dos Anjos. In addition to this record, the merganser had been sighted in Serra da Canastra, in Minas Gerais, and in Chapada dos Veadeiros, in Goiás. Possessing an elegant scientific name, the *Mergus octosetaceus* is a shy bird measuring around 50 centimeters in length. It has a long crest on its head facing backwards that differentiates it from other species. The head is metallic green. The chest is piebald with dark tones and a whitish abdomen. The back is dark green and the wings with white details. Paws pinkish-lilac. The vocalization is harsh and dry, like a “jrrec”. It lives exclusively in clear streams in mountainous regions. The dark beak is long, serrated and curved, adapted for the aquatic feeding habit that includes stingrays, larvae and snails. The destruction of the ecosystems that protected them dramatically reduced the population of this bird. It is one of the few Brazilian birds adapted to rivers in mountainous regions. Data from the Ministry of the Environment available on the internet inform:

*"Critically endangered. Small and declining population size, likely to become extinct in the wild. They are threatened due to changes in their habitat, such as the reduction of riparian forests, pollution of water courses by miners, destruction of riparian forests, as well as the installation of hydroelectric plants - which transform in artificial lakes. Its distribution area is restricted and its populations are small".*

At that point in the studies, ornithologists began to consider it very likely that the Brazilian Merganser inhabited the region known as Mata Doralice, on the lower Tibagi. There was definitely a shelter for a large number of bird species that had never been recorded for this part of the river, among them the purple-breasted parrot, the king-woodpecker, the striped saracurinha and the yellow socoi. , all of which are threatened with extinction.

The couple Bornschein and Bianca usually get up before dawn, a systematic protocol for biologists working in the field with research or inventories. It is in the early hours of the morning that the birds make an uproar in search of food. Therefore, it is at dawn, with the first beams of light illuminating the woods and woods that birds can be seen, and of course, predators, birds of prey. These predatory species are on the lookout for nests, chicks of smaller birds or even small mammals such as rodents, skunks and monkeys. At dusk, as well as when waking up in forests, the temperature tends to be milder. Thermal comfort attracts birds back. These are the strategic moments for observing the activities of the fauna. Species like the owl and the urutau escape this rule because they have nocturnal activities. Following this rigid procedure, the couple Bornschein and Bianca do not let any figure or noise pass in their horizon of vision and hearing.

Years later, the couple would make unprecedented discoveries of new species in other regions of Paraná, which would gain

worldwide attention. Countless other studies carried out by Bornschein and Bianca in various biomes in Brazil made them two of the most competent researchers in the country. There were many moments of surprise in the 1996 studies in the woods on the banks of the Tibagi. One of them does not concern a new species, but for the pair of biologists it was an equally important finding. In one of the field activities in which they traveled by car to one of the Study Areas, the Santa Branca farm, the two researchers became excited when they noticed a bird of prey flying unharmed over their heads. Probably curious or looking for food. It was a rare specimen of the gray eagle, the *Arphaelietus coronatus*, a raptor species with a wingspan of 160 centimeters that had not been scientifically recorded for decades in Paraná, whose natural habitat extends to Chile. This was another special moment for the two biologists. When they looked for a few moments at the silhouette of the bird in contrast to the sun, until they could confirm the pattern of colors and shape of the bird, then they shouted in unison: *Arphaelietus*.

Marcos Bornschein and Bianca Reinert's primary objective was not to find rare or endangered species. This was an unexpected fact that surprised the researchers during the work they carried out during 1996 in the Mata Doralice region. The work included the

identification of a number of species, not only of birds, but also of mammals, which would draw a profile of the biodiversity in this stretch of the Tibagi River.

Marcos and Bianca were part of a team hired by Companhia Paranaense de Energia, Copel, to carry out an inventory of native species in the Jataizinho region, north of the capital of Paraná. The studies included a heterogeneous group of professionals specialized in fauna, vegetation, soils and water. These surveys would compose the Environmental Impact Study, whose acronym is EIA. This document is required by state or federal environmental agencies depending on the characteristics of the infrastructure project - highways, bridges, industries, ports, hydroelectric plants or any work that causes an environmental impact. Paraná's environmental agencies are the Environmental Institute of Paraná, IAP, and the State Secretariat for the Environment and Water Resources, Sema. At the federal level are the Ministry of the Environment and Ibama, Paraná also has an Ibama Superintendence, in Curitiba.

In this case, the study was commissioned by Copel to integrate the construction projects of the Jataizinho and Cebolão dams, both planned for the Tibagi stretch near the municipality of Jataizinho, in central north Paraná. The planning stage of the hydroelectric project includes the preparation of the EIA and the Environmental Impact Report, whose acronym is Rima. Once finalized, both documents are then sent to the competent environmental agency for evaluation. If there are any additions to be made, these are requested from the entrepreneur, in this case Copel. Complements usually come from the environmental agency and the public ministry, representing citizens and NGOs. For the environmental agency to issue the operating license to the entrepreneur, it is necessary that the EIA/RIMA be in accordance with the legal diplomas. In this case, the granting of the Preliminary License, Installation License and Operating License would be assigned by the IAP. The Environmental Impact Study EIA/Rima The Environmental Impact Study, another important environmental control mechanism, was instituted by a resolution of the National Council for the Environment (Conama), in January 1986.

The Environmental Impact Study (EIA) is a technical document intended to assess the environmental damage resulting from industrial works, infrastructure, forestry implementation, or any other activity that may cause notable damage to the

environment and society. The EIA must also contain compensation and mitigation measures programs for such impacts. This study is prepared by heterogeneous teams and may require the participation of geologists, biologists, engineers, archaeologists, sociologists, lawyers, among others, which will depend on the peculiarities of each project. The Environmental Impact Report (Rima), a reduced and simplified version of the EIA, aimed at the population and the non-specialized public, aiming to explain the impacts and mitigation measures with less technical language should also be prepared. Rima is also the basis for Public Hearings with communities affected by such projects. Both reports must be developed by a consulting team independent of the entrepreneurial company and are a mandatory instrument for issuing the Preliminary License (LP).

*Article 6 of the Conama resolution describes the technical activities to be addressed in the preparation of the EIA/Rima. The first term of this article refers to the diagnosis of the characteristics and environmental situation of the area before the implementation of the project. Studies of the physical, biological and socio-environmental environment include, in the case of hydroelectric plants, data on the geological base of the subsoil, the chemical characteristics of the water, unhealthy conditions, air and climate conditions, soil suitability for agriculture, description existing bodies of water, and the water regime; composition of fauna and flora, highlighting species of scientific and economic value, rare or endangered, and the existence of preservation areas; the use of water and the local socioeconomic condition, existence of archaeological sites, cultural and historical monuments must also be considered in the studies; local societies, their dependencies, and the potential future use of such resources, such as tourism or water harvesting. The second term deals with the environmental impacts of the project and possible alternatives, discriminating: positive and negative impacts (beneficial and adverse), direct and indirect, immediate and medium and long term, temporary and permanent; its degree of reversibility; its cumulative and synergistic properties; the distribution of social burdens and benefits.*

*The third term defines the mitigating measures of the negative impacts, evaluating the efficiency of each one of them. The last term deals with the preparation of the follow-up and monitoring program for positive and negative impacts. The EIA/Rima was a milestone that enabled the participation of the population in the licensing process for infrastructure works.*

The target areas of the study were the Sertãozinho, Santa Branca and Mata Doralice farms, all on the banks of the Tibagi River; the studies also included the Tibagi River itself, where measurements of water quality and fish fauna inventory were made. This stage in the history of the Tibagi river began in January 1996, when Copel sought researchers to carry out the first environmental studies of the hydroelectric projects in the Tibagi basin. On that date, the Paraná-based company Copel contacted the Museum of Natural History of Capão da Imbuia, in Curitiba, seeking to form the technical team that would carry out the fauna inventory. Researchers from Embrapa were also hired at the same time to carry out studies of the physical environment, as studies in the field of geology related to soils and waters are called. At the museum Marcos Bornschein, Bianca Reinert and Tom Grando were contacted. Gustavo Curso and Kako were hired to study the geology. Later, in February, Tom Grando, from the museum, was assigned by Copel to also look for researchers from the State University of Londrina, UEL. At the time, Tom didn't find anyone available, which seemed strange to him, but the biologist would only understand why months later. The explanation is that the UEL researchers had been carrying out incursions into Tibagi since 1989. They knew about Copel's dam projects and were reticent about the option of hydroelectric plants on Tibagi. However, the interaction between Tom's group and the university took place shortly afterwards. Researcher Gislene Cova, from UEL, a specialist in fish reproduction, was part of the group months after the beginning of the work.

It was a clear and fresh day, Tom was on an island near Jataizinho, on the Sertãozinho farm, on the Três Bocas river that flows into the Tibagi. There, surrounded by other smaller islets, Tom dined, as usual, while waiting for the next stage of his work. He was in a shelter on the island when he received the news that

the UEL researcher had arrived at Sertãozinho farm headquarters, where the other researchers gathered for dinner (except Tom) and overnight. Tom returned by boat late at night to the farmhouse. The works of ichthyology – studies on fish –, contrary to those of Bornschein and Bianca, extend during the night. It is during this time that Tom spends collecting the nets for capturing fish, set up during the day – if the fish are not rescued, they may die, which was not the objective of the study. The fish that were trapped in the net are identified by the researcher and then released. When the specimen is unknown, it is usually collected and taken to the laboratory where research is carried out to identify or classify the species. The following day, the researcher joined Tom's team and work, starting an important and little-known research by Tom Grando himself – responsible for taxonomy, a branch that deals with species identification-, the study of feeding and reproduction of fish. Like the couple Bornschein and Bianca, during the course of their research Tom and Gislaine also made surprising discoveries regarding the Tibagi fish fauna. In its rapids and well-oxygenated waters, they found extinct species in other great Paraná rivers.

Tom also reports that the researcher who has studied the Tibagi river for years was impressed with the diversity of species that the river presented in the vicinity of the Sertãozinho farm. Even Tom, who had studied stretches of the Iguaçu River, did not know such variety. The Tibagi species were those that represented the original fauna of important rivers such as the Paranapanema river that divides the state of Paraná and São Paulo, in the northern portion of Paraná. The extensive Paranapanema joins the Paranaíba forming the Paraná River.

But the Paranapanema had already been dammed and due to the damming it lost a good part of the aquatic fauna. Some of the species that Tom and Gislaine found were the Pintado, Dorado, Pirarara and Jaú – also known as great migrants of economic interest. These species are generally associated with the Pantanal and the Araguaia River, in Goiás, but they are native species that inhabit the turbulent waters of Tibagi. The biologists' research showed that there are viable populations, reproducing and developing migrations along the river. This natural dynamic is no longer possible in dammed rivers such as the Paranapanema and the Iguaçu River. In the waters of the Paraná River, populations of large fish are isolated in stretches without influence from dams on

large rivers. The existing dams on these three large rivers flooded places with rapids and waterfalls, where the rivers are more oxygenated. The oxygen dissolved in the water supplied the needs of the demanding noble fish such as the painted and golden ones. Studies indicate that the loss of species of aquatic fauna in the dam reservoirs is around 70%.

Around the Tibagi River, Bornschein and Bianca also continued studies and increased records of birds and mammals. Although the only forest remnant in the region was the Mata Doralice and isolated riparian forests on the banks of the river, zoologists continued to testify in these remnants the existence of several species that had not been seen for a long time in this part of Paraná, with the climax being the record of the gray eagle that soared through the sky under the watchful eyes of Bornschein and Bianca. Years later, this rare species was recorded in other parts of the Tibagi basin. One of them, in the Curucaca private reserve, near the city of Tibagi, by Tom Grando himself. Two other moments were at the headwaters of the Tibagi, in Palmeiras and in the Vila-Velha State Park, 60 kilometers from Curitiba. The latter was recorded on video. The raptor stood imposingly on the sandstone walls of the Devonian escarpment. On his throne of rock he uttered a short, high-pitched chant. With the grace of an eagle, he lowered his wings in smooth flight until his wingspan disappeared before the lens. In 2005, in Ponta-Grossa, another individual was sighted, who unfortunately was shot down, for no apparent reason, by a farmer in the region. The sad fact resulted in an extensive article on the subject in a respected newspaper in the region.

Another important contribution to the studies came from the experienced forestry engineer, researcher Sílvia Ziller, who was also part of the team and whose competence was composing the inventory of native vegetation. The forestry engineer, like the other members, had a keen critical sense, so her conclusions confirmed the ecological importance of plant formation in the region

close to the São Jerônimo waterfall. There was the site for Copel's first project for the Tibagi River, the Jataizinho Dam. Silvia, who was already trained in the field of conservation, has developed an enviable career as a researcher and environmentalist. Silvia has been a member of Ashoka Social Entrepreneurs since 2002 – one of the most important international institutions of socio-environmental initiative – for her work proposal at Instituto Hórus, where she is executive president.

She also coordinates The Nature Conservancy's Exotic Invasive Species Program for South America and sits on the Board of the Global Invasive Species Program (GISP). Silvia is an internationally renowned expert on topics related to exotic species – species removed from their natural habitat and transported, by economic interests or by accident, to another location, where they generally have no natural predators and end up spreading out of control. But at the time, Silvia's research focused mainly on native species of Mata Doralice. Because it would be this area that would suffer with the possible flooding for the formation of the lake of the

## Jataizinho dam.

Embrapa researchers Gustavo Curso and Kako also had a lot of experience in environmental studies and research in the field of soils. Soil care is a priority in the environmental and agriculture sectors. Soil loss is a dramatic reality, like the north of Paraná and the pampas, with countless stretches undergoing desertification. The challenge of keeping soil vigorous and fertile for use in agriculture has not been met efficiently in rich or poor countries, it is clear that rich countries have stricter laws for soil conservation. Without soil there is no agriculture or livestock, basic segments that ensure part of human food. The unorthodox methods applied to many agricultural areas cause soil loss through erosion and consequent silting up of rivers and streams. The state of Paraná loses tons of fertile soil every year due to lack of proper management. The expansion of soy and corn fields over the forests, in addition to the presence of extensive livestock, as well as the dramatic changes in the relief and dynamics of the rivers, such as the construction of dams, may severely or irreversibly compromise soil conservation. In the case of Jataizinho, the Embrapa technicians' report warned about the consequences that such undertakings could have on the dynamics of the region's soils.

The results of the studies, both in the field of fauna and flora, geology and water quality, then began to raise discussions among researchers. Convergence of opinion on the importance of that area in ecological and biological terms was increasingly evident. Although Mata Doralice was the main target of concern, the adjacent areas were equally important. The interests and observations of the various professionals converged to a common conclusion, that region of Tibagi was definitely worthy of attention. The botany, zoology and physical environment staff met to have meals. There we interacted and acquired knowledge, we began to have an identity in relation to the studies, and to understand that the signs of the ecological relevance of that region were something to worry about, reported Tom Grando.

Until that moment, the importance of the Tibagi River was hidden in works by the University of Londrina and in the aged pages of books written by famous naturalists such as Saint-Hilaire, Big Witter or the Keller Brothers who roamed there centuries past. As well as in the more contemporary works of the German geologist

Reinhard Maack, the renowned researcher and defender of the forests of Paraná. But for most citizens of Paraná, the Tibagi was nothing more than a river drowned in oblivion. An article commissioned by the newspaper Folha de Londrina was about to take Tibagi out of inertia and show the population the strength of its rapids, its fish and the biodiversity of its forests. That mission fell to the journalist Lúcio Horta, who mined in murky waters for the risks that hovered under the turbulent river. Lucio looked for researchers from the University of Londrina, who had been studying Tibagi for years, and also made contact with a group of anonymous researchers who started to frequent that region of Paraná, it was Tom Grando and his colleagues. Quite sensitive to the events, Lúcio sought out the researchers for the interview and photos. It seemed, and it was, the right opportunity for the researchers to report the results of the studies they had carried out up to that date, there would be the chance to talk about the gray eagle, the Brazilian Merganser and the guinea fowl. The possibility of disclosing this information was an alignment of the planets, and, incredible as it may seem, the article completed two and a half pages with large, colorful photos and a bombastic headline – at least from the point of view of the researchers – that said: The possible goodbye to the Brazilian Merganser. This is how the article began, drawing attention to the risk of extinction of rare species such as the Brazilian Merganser, among others. He also spoke in great detail about the Tibagi River, not only the region that was the target of the studies, but describing details about the fauna, vegetation, soil and even the opinion of the researchers who prepared the studies. (Document 01)



possible damage caused to the river as a result of large hydroelectric power plant projects, which would be, above all, irreparable. Both shared concerns that converged on the protection of existing biodiversity in the Mata Doralice region.

The Mata Doralice forest reserve, owned by rural entrepreneur Pedro Favoreto, has 200 hectares and is located in the municipality of Ibiporã, in the north of Paraná. Favoreto has kept the forest intact since he acquired the area in 1975. The reserve is home to species of trees that are extinct in most of Paraná, such as peroba, pau-marfim, heart of palm and pau-d'alho. In 1996 Favoreto sought assistance from SOS Mata Atlântica. At the time, the superintendent of the NGO, Mário Montovani, sent a letter to Copel seeking to question the hydroelectric projects for that part of Tibagi. Edison Matos Novak, Superintendent of Energy Development, replied: *"The generation of electricity from hydraulic sources is located worldwide among the so-called renewable energies, a factor that recommends it as a priority when compared to other energy sources available..."*.

There, students of the biology course had also been carrying out studies since 1989 under the guidance of professor Francisco Soares, coordinator of the university's research

## project entitled Aspects of the Fauna and Flora of the Tibagi River Basin.

The project, which was a partnership between the university, Klabin Paper e Cellulose – an big industry located in the city of Telêmaco Borba – and the Intermunicipal Consortium for the Protection of the Tibagi River. The university's research showed encouraging results regarding the diversity of fauna in the Mata Doralice region. But in the course of the research, an increasingly devastated region was seen. And with the presence of Copel, the students felt a sense of disappointment, mainly due to the fact that the Jataizinho project would flood part of Doralice.

The vegetation that occurs in the lower Tibagi, especially the shrubby type, does not exist in the upper part and could not be recomposed as stated in Copel's reports. Like Tom Grando and his colleagues, Professor Soares did not condemn the construction of dams at that time. But he concluded that these infrastructure works should follow construction standards in order to minimize the real impacts, after studying the hydrographic basin in its entirety and the technological and strategic alternatives available.

This does not happen, because *"any seller wants to prove that his product is necessary - Copel's project is exaggerated and more discussion is needed (...)"* said the professor to the Folha de Londrina newspaper, referring to the fact that Copel is interested in selling its product, energy. Prof. Soares highlighted that possibilities such as solar energy could significantly reduce the consumption of hydraulic energy. Solar or wind energy does not emit pollutants during generation. Solar energy can be used to generate electricity or in solar water heaters to store water heated by sunlight. However, these technologies

developed decades ago did not exist in the government's energy production plans. Even in the face of so many controversies regarding the validity of many large dam projects on large Brazilian rivers, energy alternatives continued to be immersed in deep waters for many years. Journalist Lúcio Horta concludes his article in Folha de Londrina newspaper by highlighting that the construction of the seven power plants projected for the Tibagi River – which means river of rapids in indigenous language – would transform this extensive river into an immense desert of water.

The article, which became historical in the timeline of the Tibagi River, had a positive impact on concerns about the state of health of the river, especially the last remnants of the Paraná forest. This situation alerted, even if in a fragmented way, some technicians from the Environmental Institute of Paraná. But the following years would be destined for immense pressure from Copel, the government of Paraná and the contractors on the environmental agencies, responsible for analyzing the opinions and issuing the respective licenses. But at that moment, the article in Folha de Londrina caused an

unofficial rift between Copel, the contracting company, and the researchers hired for the Environmental Impact Study. This was the trigger for a sequence of events that lasted until mid-2003. Tibagi gained allies over the years, common concerns brought together UEL specialists, the Environmental Impact Studies team hired by Copel, civil organizations, citizens of the Tibagi basin, philanthropic entities, rural landowners, the population of Londrina and from the city of Tibagi. This was the embryonic stage of resistance. At that time, Copel understood that the researchers could not have released such information to the press, as, as contractors, it was consequently the owner of that information. On the other hand, the researchers understood otherwise: that the discoveries were important and of interest to the population. The researchers, who already looked at Copel's interference in the field work with reservations, since technicians from the energy company accompanied the steps of these researchers in the field activities, perceived the intention of policing. There existed a relationship that was not very correct from the point of view of the legal framework, since the

1986 resolution of the National Council for the Environment (Conama) prohibited the direct relationship between the contractor and the contractor in field work.

### ***Conama and the National Environmental Policy***

*The National Environmental Council – Conama was created in 1981 to deliberate on the National Environmental Policy. The Ministry of the Environment, in turn, created in March 1985, among many other attributions, is currently responsible for chairing Conama. During the 1980s, these bodies played an important role in determining environmental policies. A positive moment for nature while the economic situation was still feeling the effects of galloping inflation, a military legacy that haunted the lives of Brazilians.*

The fact that Copel established boundaries between researchers and the press generated a situation of animosity. As a result of these events, there were meetings between the team and Copel. There, the energy company demanded a change in behavior with regard to information passed on to the press. And he linked this demand to some kind of restriction of the team's payments. At the time, there were also restrictions on the team's access to some documents issued by Copel itself. A situation of animosity became evident as the team considered that the company itself was trying to intervene and even omit important information about what was happening in the evolution of the Jataizinho project. Copel seemed to understand that the researchers were crossing boundaries by publicizing certain information, even if these restrictions were not established in the contract between the energy company and the team.

Copel, which had directly hired professionals for environmental studies, then transferred this function to the consulting firm Intertechne Consultoria Associados (Documento

02), which came to be the team's contractor. After the meetings and the moments of friction between the entrepreneur and the team, the electric company decided to have a company intermediating the work - as is done nowadays. This was a way for Copel to expose itself less and protect its interests.

And so it was until the completion of Jataizinho's studies. The release of payments was still linked to the reading of reports by a technician from Copel, Sergio Kraemer. These interferences would be questioned by the consultants in court in the near future. Although the dilemma between contractor and contractor was still up in the air, the same team continued the work until its conclusion and even continued with the studies of other dam projects by Copel itself. The research work lasted until December 1996, when a consulting company called Juris Ambientis Consultores, owned by Manoel Domingues, willing to co-opt with Copel's interests, was hired to consolidate the final report of the environmental studies, the EIA/ Rima, from the Jataizinho project.

As there was already a clear intention not to give visibility to everything that appeared in the Jataizinho field studies, Tom and his colleagues demanded from Copel that that information be passed on to the public and the environmental agency in the exact way, without any kind of slowdown. The researchers then sent a series of documents informing IAP, Ibama, Copel and Juris Ambientis that the full content of the impact reports of each of the studies should be taken to the environmental agencies, IAP and Ibama,

and to the public without any compilation. . The environment prosecutor in Curitiba, at the time the prosecutor was Mr. Honorato Santos, was also informed ([Documento 03](#)). The reasons for the precautions taken by the team were to preserve the reliability of the studies.

In view of the facts, the team took steps to definitively ensure the authenticity of the documents. The researchers registered each of the 1996 environmental impact studies of the Jataizinho project in a notary's office, which were duly microfilmed and archived. This strategy was decisive in highlighting and reiterating the real concern of the researchers regarding the content of the information in the studies. “Look, we are concerned and we are showing you that we are attentive to the information in the final report”, said Tom. Thus, the notary records were immediately communicated to the entrepreneurs, Copel, and the company Juris Ambientis. Tom Grando emphasizes and takes care to make it clear that there was no intention of bad faith on the part of the team of researchers, nor a form of exacerbated pressure created for the entrepreneur to fall into embarrassment. It was simply a way of safeguarding the

legitimacy of the researchers' work. A concern that Time tried to justify.

### **The ends justify the means**

In early 1997, the researchers' justification was confirmed. The final report formatted by the consulting firm Juris Ambientis, delivered to Paraná's environmental agency, the IAP, did not include all of the reports prepared by the team. Many texts that were quite straightforward and that indicated serious environmental impacts were extracted or deleted. And when compared to those that had been registered with the documents delivered and filed with the state environmental agency, they definitely did not reflect what the group of researchers understood as adequate for the impact assessment for the Jataizinho plant. With the confirmation that the studies had been corrupted, the team went to the IAP to retrieve a copy of the document submitted to the environmental agency's protocol. A copy of the document was delivered to the team after insistence and much resistance from the protocol sector, without a clear reason ([Documento 04](#)).

Without receiving any response from any of those institutions, the researchers appealed to the Public Prosecutor's Office of the State for the Environment seeking yet another guarantee for that impasse. They also accessed the administrative sphere. At the IAP, Themis Marques, head of the Environmental Impact Assessment Department, said that no document that did not reflect exactly what the researchers understood as reasonable would be analyzed or approved. When investigating the Mauá Case, we will see that many professionals showed concern and responsibility in fulfilling their attributions as the facts evolved. The serious and sensitive posture of both technicians from environmental agencies and magistrates sought to comply with the law and defend diffuse rights. However, as resistance grows, the union between political forces and corporate interests begins to dictate the rules, different from those postulated by the laws.

At that time hydroelectric projects were considered inevitable. Silvia Ziller and Gustavo Curcio had a lot of experience in environmental consulting, therefore they had a historical reading of infrastructure projects. The team's goal followed this reading, which was, above all, to seek to minimize the environmental impacts of the work. And never question the validity of the undertaking, as happened in the following years in relation to other projects for Tibagi.

At the time, Copel generated job opportunities for environmental technicians - biologists, forestry engineers, geologists, among others. It was, therefore, an important contractor for environmental consulting work. The attitudes of Tom and his colleagues began to annoy even other consultants in the environmental field. Among many reactions, the most symbolic was an article published in the newspaper of the regional council of biology, in Porto Alegre, in which biology students expressed criticism clearly aimed at Grando's group, as they outlined conflicting ideas with those of the electricity sector. The article read "These biologists don't seem to use electricity, appliances, or don't know where the light comes from" - the socio-environmental impacts of the Electricity Sector undertakings were little known at the time. Questioned formally by the researchers, the president of the Regional Council of Biology (CRBio), Dr. Vera Callegaro, said that the newspaper was an open vehicle for opinions. Again, the researchers filed another request asking CRBio for new

explanations, dissatisfied with the vehicle that should defend biology's code of ethics and the biologists themselves favoring erroneous opinions. Vera Callegaro, who became Secretary of the Environment for Rio Grande do Sul, never spoke out.

This example also illustrates how the misunderstanding around the energy issue extended even within the biology council itself, whose purpose was to shed light on environmental policies and open up serious discussions about the state of environmental conservation.

*It is a question of citizenship that transcends the biologist's code of ethics. From the moment you are aware of something, you are no longer free. Either you are an accomplice to the crime of illegality or you fight against it. And silence does not benefit either the golden or the painted,* Tom Grando told me in a very incisive way when I questioned him about the indecisive posture of influential people who became aware of the facts.

During 1997, after the official manifestation of the researchers regarding the documents adulterated by the Juris Ambientis delivered to the environmental institute, communicated to the entrepreneurs and environmental agencies about the measures that were being taken, a second official request was made by Bornschein, Grando, Bianca Reinert and Gislaine. This time, together with the Public Prosecutor's Office of the State of Paraná. These complaints were

presented to the prosecutor Saint-Clair Honorato Santos, in Curitiba. The prosecutor obtained detailed information on the matter and a new case was filed with the prosecution. As Bornschein and his colleagues did not obtain answers to their past questions, they thought it wise to seek official intervention with the Saint-Clair prosecutor, who would officially question the corrupted documents (Document 05).

Following the chain of unexpected events, the biologists became aware that the document delivered to the prosecutor containing attachments that presented copies of the original environmental impact studies and evidence of Copel's interference in the field work had been sent to the comarca of Uraí, north of Paraná, and there disappeared. The possibility that the prosecution had suffered some kind of pressure from Copel, which is an autonomous body within the state capable of accessing the environmental institute or even the governor himself, has never been ruled out by the biologists. Without results and dissatisfied, the biologists resorted to the recently inaugurated General Ombudsman Service of the State of Paraná,

João Elias de Oliveira, at that time in the Lerner government (Document 06). There they were received in a solicitous manner. A complaint against the Public Ministry was then presented to the ombudsman. In a later meeting with the biologists, the attorney-in-fact, Mr. Saint-Clair, was uncomfortable with having been accused by the ombudsman, and concerned, he pondered that Jataizinho would be an enterprise under the tutelage of Uraí. But the biologists understood that both Copel and Juris Ambientis, which had been questioned, were headquartered in the Curitiba region. At that time when Marcos and Bianca embarked with Grando on a one-way trip, the biologist could even have been mistaken for a student with the time and inclination to be an out-and-out activist. But the years have tried to make Grando one of the protagonists of a story that doesn't give way to amateurs. In 2010, Tom Grando reported the facts surrounding the large dam projects for Tibagi during a long testimony, recalled the events with a countenance of one who has been matured by experience, cited the facts omitted by the mainstream media, the ideological struggles, his frustrations and

personal achievements. Reports by lawyer Rafael Filippin and peasant Ismair Carvalho also came to consolidate this book, in addition to extensive research. At the time, the biologist was the institutional coordinator of the Environmental League, the oldest environmental NGO in Paraná, founded by José Álvaro da Silva Carneiro. Álvaro is an activist and profound defender of the landscapes of Paraná, it was he who started the first initiatives to map the Tibagi River. Grando took on this mission, and the league began to focus its activities on issues related to socio-environmental justice and the fulfillment of diffuse rights within the scope of the judiciary, related to the use of water, especially in the Tibagi, Iguaçu and Ribeira basins. Tom, who had done graduate work in zoology and specialized in the study of fish, found an opportunity to exercise his knowledge and ideal. In 2000, he started to work as a specialist in public policies - trained by the North American Agency (USAID) - at the non-governmental organization Spvs, in Curitiba. Tom currently works as a consultant, in addition to being an entrepreneur in the field of agroecology. At that time, Bornschein,

Grando, Bianca and Gislaine were experiencing experiences whose content would provide them with a panoramic view of the backstage of Brazilian energy policies.

At that moment, the peaceful struggle against the oppression of large corporations and the political influences behind the construction of the large dams in Tibagi germinated. In the years that followed, after the first denunciations of the Mauá case, those involved in the effort to conserve the Tibagi basin would feel firsthand the overwhelming influence of one of the most powerful sectors of government autarchies, the electricity sector. They also discovered that perseverance and the union of the different segments of society would be the only means of not letting the waters of Tibagi be silenced. The story that had its beginnings in the omissions of public documents became, in little more than a decade, a tangled tangle of influences and illegalities in the various pillars of public administration in Paraná and at the federal level.

## The Birth of the Merganser

The first songs that precede dawn reach Marcos and Bianca's ears, timidly and almost silently. The first rays attract the birds that little by little take over the edges of the forests, close to the pasture of the Santa Branca farm. Bornschein's gaze is contemplative, like someone looking beyond the horizon. There are moments when thought gives way to poetry, and there is no way to separate the work of an observer of nature from that of a thinker. The knowledge acquired in the field, wandering along the paths of evolution, through forests and rivers like an investigative naturalist, has no substitute, not even in books. It is true that there is no way to be a doctor of something that has not been experienced or experienced.

It is only by integrating into the natural context to understand the filigrees of nature and the intricate relationship between species. This is a way of evaluating the world in a different way from that learned in big cities, it hovers under a sphere of common sense and rationality. To be more pragmatic, under the laws of physics and biology, it goes far beyond the fragile perception of everyday life. Here discovery finds its most essential meaning until the moment when the researcher, in his wanderings, is faced with the threshold between the work of an inventory and the perception of the importance of life itself. It was with this discernment that Bornschein built the studies at Tibagi. At the end of 1997 Marcos Bornschein and Bianca Reinert found the Brazilian Merganser at Santa Branca Farm.

## Justice in defense of Tibagi

The inventory of the hydroelectric potential for Tibagi comes from a long time ago. They began with the works of the company Canambra for the southern region, started in 1964. At the time, 9 points were identified for hydroelectric projects on this river. Between 1974 and 1984, Copel revised the inventory and determined seven potentially viable locations for building large dams. The seven projects were named Santa Branca, Telêmaco Borba, Mauá, São Jerônimo, Cebolão, Jataizinho and Tibagi plants. The use plan, if approved, would drown more than 70% of the river and its banks. As quoted by the Public Prosecutor's Office (...) the way in which Copel and private companies have sought to execute their plans does not respect the population's right to know what will really happen, it also disrespects environmental laws and the knowledge of researchers who seek to clarify the public . In 1997, Copel carried out another inventory review, starting to consider the existence of 8 hydroelectric developments. The study was approved by the National Electric Energy Agency (Aneel) through Order

## No. 410, of 04.1.05.

### *National Electric Energy Agency*

*Aneel was created in 1996 by the National Congress under a neoliberal proposal. This is linked to the Ministry of Mines and Energy. The government's argument was that privatization in the electricity sector created a complex market, with new requirements, with the participation of private companies (concessionaires) in the generation, transmission, distribution and sale of electricity. The agency should, therefore, regulate and supervise the production, transmission, distribution and commercialization of electric energy. And also be responsible for hiring concessionaires, selected through bidding, trading or auctions.*

An important fact that converged with the content of the public civil action of the National Association of People Affected by Dams (Anab) occurred with the tendency of the environmental agency to question such undertakings. It was the state pronouncing itself in favor of more comprehensive studies. At the end of 1997, feeling the first traces of how energy policies and corporate interests worked, the biologists registered a complaint with the police, a police report (BO) was made saying that public documents had been falsified. It was one more guarantee in a system that handled citizens' demands in a weak and inefficient way. At the time there was no civil police investigating environmental crimes, they were heard at the police station for embezzlement and cargo theft by Dr. Cícero Jose, police chief. Grando says that, to his surprise and that of his colleagues, an investigation was initiated by the police and representatives of the companies Copel and Juris Ambientais were heard. Later, years without moving forward, the process was shelved. The first questions from this group of researchers were made as an individual, with the ID on top of the counter, as they say. Meanwhile, the same team continued the studies for the Cebolão Dam, since the Jataizinho studies had ended. Events were taking place simultaneously. And as the researchers continued their studies, and got to know the Tibagi River more comprehensively, they became even more critical. And concerns about the fate of Tibagi went beyond those that had arisen a year earlier, in 1996. The risk was imminent, the last remnants of

biodiversity in the interior of Paraná were at stake. The extinction of the complex web of life. There was only one way to keep the set of flora and fauna species intact: the assessment of the entire basin. The extinction of species is a serious indication that a certain environment is threatened. If species that were extinct in other regions still survived in Tibagi, the researchers had confirmation of the importance of conserving areas of one of the last great systems of life in Paraná. Copel's projects called into question the responsibilities of a state overwhelmed by deforestation. The hydroelectric use plan for Tibagi did not include environmental standards or the voice of the population.

Data presented by expert analysts from the Federal Public Ministry of Mr. Carlos Alberto de Souza Correia, biologist, Dalma Maria Caxeta, sanitary engineer, and Emília Bulhoa Botelho, anthropologist, concluded that “the integrated assessment of the impact on the physical, biotic and anthropic environment of the basin, contemplating the cumulative effects of all the plants, was not effectively carried out. The study of the inventory and its reassessment and the Environmental Impact Study to characterize the entire area of influence of the basin and that the EIA/RIMA of the 4 plants can be considered as important sources of data for the preparation of an integrated study of environmental impacts, but do not replace them. (...) The impacts on the entire basin should not be treated as a simple sum of local impacts, but rather predicting their mutual, cumulative interference, taking into account the multiple uses of water and other projects for the region, [such as] irrigation, urban settlements, industrial, etc. The Attorney General's Office was convinced of the expert reports and the need for care in that region of Paraná. Attorney Dr. Mário José Gisi, at the time, pointed out that the integrated study “covers only 4 developments (...). There are, therefore, 3 plants, not considered in the project. We conclude that the integrated EIA prepared by the ETS companies does not meet the basic scope suggested by Ibama and does not satisfy the requirements of a complete and integrated study of the entire Tibagi river basin”. It was known that Aneel's policy established by legal acts of 1998 safeguards the right of the state-owned company to claim the optimal use of a given river. However, the definition of optimal use according to the understanding of the

electricity sector, in practice, means the maximum use of the hydromechanical potential of the watercourse. *"It is considered Optimal Use, all potential defined in its global conception by the best axis of the dam, general physical arrangement, operating water levels, reservoir and power, part of the alternative chosen for the division of falls of a hydrographic basin"*. Aneel Law No. 9074 of July 7, 1995.

The decisions behind the mega-dams continued to be based on a cartographic base with indications of altitude, unevenness and distances. You don't see forests, people or fish there. For the electric company, concerns about social and environmental damage continued to be mere protocols. After a moment of frustration for the researchers, the Public Prosecutor's Office of Paraná resumed investigations in July 1998. In addition to Grando, Bornschein, Bianca and Gislaine, they also testified before prosecutor Cynthia Pierri, months after contacting the ombudsman. (document 7) Cebolão and Mauá were not priorities at that time, Copel's attention was focused on the São Jerônimo project, which, in the electricity company's view, was the most promising option. At the time, Ibama had

requested an integrated environmental impact study for the four projects. Unforeseen circumstances led Copel to change its plan: *in December 2000, the Companhia Paranaense de Eletricidade published in the Official State Gazette the withdrawal of the Mauá, Cebolão and Jataizinho projects.*

The EIA/Rima de São Jerônimo was filed with the IBAMA superintendence in Curitiba on July 13, 1998, together with Mauá, Cebolão and Jataizinho, initiating the licensing process. The project conceived a dam 106 meters high and 560 meters long, from one side of the river to the other. With an installed capacity of 330 megawatts, it was budgeted in March 1999 at US\$310 million. The predicted flooded area would be 66 square kilometers. The reservoir would reach six municipalities: São Jerônimo da Serra, Sapopema, and Curiúva, Londrina, Tamarana and Ortigueira. This dam would be one of the most profitable in terms of electricity generation and one of the most profitable for contractors. With eyes focused on the advantages of the enterprise, the difficulties and obstacles were underestimated. São Jerônimo would flood 400 hectares of forest in the Mococa indigenous reserve. This condition would take the process to the National Congress, where decisions are more visible and slower. But since at that time the minority commission on the environment was occupied by the federal deputy from Paraná, Luciano Pizzato, Copel bet that even though it was an indigenous reserve and had to go through the National Congress there was a bridge capable of influencing the fate of São Jerônimo. Soon, the plan could get off the ground. The first Public Civil Action (ACP) questioning the model of stair dams on Tibagi was filed by the National Association of People Affected by Dams, Anab, through the Public Ministry. That was in November 1999. At that moment, another important protagonist entered Tibagi's history. The liability action for damages to the natural, cultural and social heritage was then proposed in the Federal Court of Londrina. The objective was to prevent the construction of the São Jerônimo plant until an integrated study of the entire Tibagi basin had been carried out, including the interrelationship of the foreseeable damages of the

seven dams declared in Copel's inventory approved by Anel in 1997. Anab added strength to the popular actions of Tom Grando and Gislaine. There was another action that began to be processed in parallel with the Anab action, prepared by Rafael Filippin, the lawyer. Far from the capital, in the Tibagi Valley, social movements organized meetings and debates, among them the "First Meeting of the Populations of the Tibagi Valley", in February 1998 in the city of Jataizinho. Socio-environmental justice flourished.

## 1º ENCONTRO DAS POPULAÇÕES DO VALE DO TIBAGI

### RELATÓRIO SÍNTESE DO ENCONTRO

As populações do Vale do Tibagi, reunidas no dia 20/02/98, das 9:00 às 16:30hs, no Centro de Pastoral de Jataizinho, através de representantes das comunidades indígenas, de trabalhadores e proprietários rurais, de moradores do campo e das cidades da região, de órgãos públicos municipais, estaduais e federal, de organizações não-governamentais de âmbito local, regional, estadual e nacional, de movimentos populares, pastorais sociais, sindicatos, universidades, dentre outros, objetivaram discutir sobre o processo e os reais impactos sócio-ambientais do projeto de construção das Usinas Hidroelétricas na Bacia do rio Tibagi.

Promovido e apoiado por entidades como a Associação Projeto Educação do Assalariado Rural Temporário, Comissão Pastoral da Terra do Paraná, Conselho Indigenista Missionário, Associação Nacional dos Atingidos por Barragens, Comissão Regional dos Atingidos pelas Barragens do Iguaçu, Departamento de Ciências Sociais da Universidade Estadual de Londrina, Laboratório de Arqueologia, Etnologia e Etnohistória da Universidade Estadual de Maringá, Rede de Advogados Populares do Paraná e o Ministério Público do Estado do Paraná, o 1º Encontro das Populações do Vale do Tibagi contou com a presença de aproximadamente 96 participantes, os quais discutiram sobre questões como o trâmite legal para a construção de UHs, e os impasses decorrentes da omissão de dados no ELA/RIMA "encomendado" pela COPEL, conforme inquérito civil em tramitação na comarca de Uraí; para esta discussão, contou-se com a presença dos Promotores Públicos de Curitiba, Sr. Saint-Clair Honorato Santos, e de Guaíra Sr. Robertson F. de Azevedo. Na continuidade das discussões, foram apresentados os resultados de pesquisas científicas desenvolvidas por pesquisadores das Universidades Estaduais de Londrina e Maringá, abordando os impactos que a construção das UHs trarão: na biodiversidade (peixes, vegetação, clima, etc) dos vales e em toda a região, na qualidade da água a ser utilizada e consumida, no patrimônio histórico-cultural (sítios arqueológicos, culturas, memórias, etc) das populações milenares que ocuparam e ocupam a região, na sobrevivência sócio-cultural das populações indígenas que utilizam as terras baixas e que dependem intrinsecamente da natureza aí existente para manter seu modo de vida. Foram apresentados também depoimentos retratando a situação vivenciada atualmente pelos impactados da construção das Barragens de Salto Caxias e do Rio Itajaí/SC, expondo as dificuldades na negociação e no pagamento das indenizações por parte do Estado, na desestruturação dos laços familiares e das culturas historicamente construídas das populações expulsas das terras alagadas e da perda de parte de seus habitat. Falaram sobre a necessidade fundamental da organização e mobilização das comunidades da região para se opor em tempo à construção das UHs no rio Tibagi. Testemunharam estas informações o índio xokleng Nhamblá Gakram da Área Indígena de Ibirama/SC e Hélio Kuerten Bruning representante da CRABI – Comissão Regional dos Atingidos pelas Barragens do Rio Iguaçu. Para complementar os depoimentos, foi apresentado o filme "Desapropriado" que expõe a violenta e trágica história da construção da Hidroelétrica de Itaipu, bem como os prejuízos trazidos à população desapropriada de suas terras pelo alagamento.

Motivados pela reflexão do conjunto das informações reais apresentadas, os participantes debateram e questionaram o processo omissivo em que se vem tratando o impacto pelas UHs no rio Tibagi por parte da COPEL, expondo um alto nível de desinformação através de muitas dúvidas, falsas afirmações e expectativas às comunidades. Várias foram as manifestações, mesclando a "esperança" de que a construção das UHs traga muito emprego, desenvolvimento e solução para os problemas da cidade (moradores da cidade), como a preocupação com os impactos com o meio ambiente (mudança no clima para a agricultura –

## Rafael Filippin, the lawyer

In 1999, in addition to consulting work, Grando worked as project coordinator at the Wildlife Research Society (Spvs), an important non-governmental organization in Paraná. Lá Grando was responsible for implementing projects for Private Reserves of Natural Heritage in the region of Morretes, Antonina and Guarçouba, on the coast of Paraná, an area controlled by the Atlantic Forest. This successful project had the participation of the NGO The Nature Conservancy and resulted in the conservation of native Atlantic Forest forests and income generation for local communities.

It was at that moment that Tom Grando met Rafael Filippin. The biologist had been tasked with selecting an intern from the advocacy area for the organization's legal work. After an interview and a lot of empathy between the two, the recently graduated Rafael Filippin was accepted to do an internship at Spvs. Tom, who followed Filippin's work, observed a person with sensitivity and special appreciation and concern, not only for the environmental issue, but also for social justice.

He was a lawyer with a very deep ethical feeling regarding issues of diffuse rights. Filippin, in addition to his activities at Spvs, became aware of and became interested in the questions that Grando had asked him about Tibagi. Filippin's participation enshrined yet another important stage in the history of questioning the river, which began with Grando and his colleagues in 96. With Filippin's participation alongside Grando, Marcos, Bianca and Gislaine, new legal elements would be added to the studies' questions made between 1996 and 1999 on the Tibagi projects, a new stage in the history of an intensive legal struggle was beginning, which would gradually reveal the strategy of the electricity sector. During this period, three popular actions filed by Rafael, Grando and Gislaine Grando were later unified by the judiciary. These initiatives questioned São Jerônimo, which was in the sights of the interests of the electricity sector as the main one of the seven projects for the Tibagi basin. The unified action of Tom and his colleagues began, in a strategic way, to add strength to the public civil action filed by the National Association of People

Affected by Dams. Anab emerged in response to the expropriation of a contingent of small and medium-sized farmers, for more than three decades, many of which did not receive any social or financial compensation. Currently, Anab members total almost one million Brazilians, a number equivalent to a quarter of the population of the capital of Paraná, Curitiba. Both actions require, among other items, the integrated study of basins, and not just a local study as was being done.

The interference that Copel had with regard to studies was also questioned in the actions of Grando, Filippin and Gislaine. In 1997, the National Council for the Environment (Conama) eased the resolution of 86, which in no way allowed the relationship between entrepreneur and researchers in field work. Questions about Copel's interference in the studies lost their relevance in the class action. However, the questioning of integrated studies, much more relevant, continued to be processed. A new moment in the history of Tibagi was born. However, the adoption of policies aimed at privatization were about to transform the energy sector into a public utility and capitalist gears whose primary goal would be profit. Treating energy as a valuable currency made Copel more ambitious, more aggressive and less concerned with socio-environmental issues. Implemented in the early 1990s, under the Fernando Henrique government, such policies were incorporated by the Lula government into the 2000s, and strengthened to the extreme by the Dilma government. The resistance that arose in Tibagi would be hostage to an old unscrupulous market order, which only seeks profit.

## chapter two

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# A SECTOR IN TRANSFORMATION

## **The Nineties**

In 1989, the international event Latin America Adjustment: How much has happened?, in Washington, brought together representatives of the United Nations, bureaucrats from international economic organizations such as Bird, Bid, IMF and economists from several Latin American countries. At this event, strategies were formalized, particularly for Brazil, which included the privatization of profitable state-owned companies, especially those of a strategic nature (telecommunications and energy), above all, for the payment of internal and external debts. (Batista, 1994)

Taking as a justification the institutional and economic crisis that prevented the state from investing – whether in the expansion of the system, to expand the service, or in its technological improvement, to improve the quality of services, or even in the reduction of tariffs -, a deep change in the structure of the sector was idealized with the unbundling - separation of distribution, generation, etc. - and privatization of the system. The liberal policy of privatization, conceived and initiated in the Collor de Mello

administration, had as its starting point the sale of steel companies. In the first term of the FHC government, this strategy gained top priority, when it came to represent one of the goals of his government program.

The privatization policy that was already in the interests of the FHC government was encouraged by the Minister of Finance, who returned from Washington determined to accomplish this goal and reduce the internal debt with the sale of Eletrobrás, Petrobrás and Vale do Rio Doce. The first step was to privatize Escelsa and Light, the latter also giving control to Eletropaulo. The lobby of multinationals was more convincing than the opinion of experienced Brazilian specialists, among them physicists and engineers. Finance economists preferred to believe in the benefits of foreign capital. The state finally sold assets worth more than \$100 billion for 20% of that. The government's arguments were: the end of the State's monopoly, greater competitiveness, efficiency, competence, productivity and decentralization. At that time, a study was carried out by Teplitz Sembitzky, commissioned by the World Bank, which pointed to a better performance of the

electricity sector in countries like Brazil under the tutelage of the state. The study says that technical efficiency in generation, transmission and distribution has little to do with competitiveness.

The continuity of the privatization of companies in the electric sector, foreseen to solve the damage caused by the public debt and to seek monetary stabilization, in other words, selling profitable assets to pay debts was not an intelligent option. While private groups and foreign financial funds invested in highly profitable assets, that is, in the purchase of state-owned companies in the electricity sector, the fiscal and commercial deficits and the growth of the public debt were only mitigated, and the fragile financial situation of the country was not resolved. , as Sauer reveals.

The results achieved by the restructuring were mediocre, from the macroeconomic point of view, and caused concrete damage to the economy and the population, especially the lowest-income population.

Income from the electricity sector could, after serious restructuring, provide an important source of income for the State. This includes investments in public policies aimed at more

effective environmental projects. Light, for example, holds a monopoly in its electricity distribution area, with monthly revenues of US\$ 100 million, and physical assets of US\$ 3 billion. Including credits add up to US\$ 6 billion.

# ConsequENCES OF privatizaTION

According to specialists, the precipitated policy of privatization of the electricity sector generated dramatic problems whose consequence was the intense institutional breakdown. The negative effects indicated by scientists from the University of Rio de Janeiro and São Paulo pointed to losses resulting from the low values at which the concessions of the valuable state-owned companies were negotiated. Another effect pointed out by the specialists was the possible compromise in the quality of the services provided by the companies due to the massive dismissal of qualified technical staff in decades of formation of the sector. The progressive increase in tariffs, mainly in the residential sector, promoting social exclusion was another negative impact. And probably the most dramatic effect was seen with the drop in investments in expansion and maintenance of

generation and transmission systems in the electricity sector. Of course, in the universe of private capital, one of the rules is to reduce costs and maximize profits. The restructuring of the electricity sector led to the resignation of the public administration, as an institution that planned and guided the policies of the electricity sector.

Electric energy, an element of public utility, was converted into merchandise (commodities), the target of the profane interests of large capitalist groups. Profit would henceforth be the sector's main motivation. The economy focused on the individual and the environment became more distant than it always was, mentions the engineer Luis Sauer.

The hydrographic basins compose very peculiar biological elements and extremely dependent on physical conditions such as the water cycle, relief and geology. Evolutionary processes have made the physical and biological environment interdependent. You can't think about the conservation of one without highlighting the other. There is no vegetation without water, there is no soil without vegetation, there is no fauna without vegetation and many plant species would not exist without animal pollinators and seed dispersers. And finally, there is no quality of life without respecting the limits of natural resources. Therefore, to safeguard the hydrographic basins, one must think about land regularization, water supply, maintenance and restoration of riparian forests, fish protection programs, irrigation and conservation projects, rational projects for the use of hydromechanical power, among others. These are compensations that could be being carried out with the

participation of profits from state-owned companies in the electricity sector, as a form of compensation for the use of water resources. However, preventive public policies have become incompatible with the privatization of the electricity sector, as this type of priority is rarely of interest to private groups.

The environmental and social damage caused by the plants ends up deposited, over the years, in the taxpayer's pocket.

Despite strong opposing arguments, the Collor and Cardoso administrations bet that privatization and development should go hand in hand, and that the generation of wealth and expansion of the system would be more efficient in the hands of large capitalized groups. In this way, the state could direct attention to public goals such as education, health, security, sanitation, employment, among others. The economic teams also believed that energy tariffs would self-regulate within a competitive system. They also said: with the income from privatizations, the government would liquidate the public debt and settle the external accounts.

Currently, the tariffs that two decades ago were accessible to the most modest classes are among the most expensive in the world. This was the result of a recipe that didn't work out. Remedy projects continue to be funded by the state and social problems have not been resolved as expected.

# Competitive market failure

The biggest beneficiary of tariff adjustments – provided by the liberal model – has been the privatized segment of the electricity industry, responsible for distribution, and formed in part by international capital. This amassed more than 13 billion extracted from Brazilian society through increases greater than inflation from 1995 to 2002 – more than 100% for the residential class, and 50% for industry and commerce. In the current electrical system, the beneficial adjustments of the competitive market, such as improving quality and reducing prices in the provision of electricity services, are doubtful, as Sauer warns:

*The fixed costs of a new or privatized hydraulic power plant represent the most significant portion of total expenses. After the construction of the plant, the possibility of reducing operating and management costs is minimal, a situation that, contrary to what was expected, caused anti-competitive behavior. In the situation in Brazil, of scarce supply and repressed demand, opportunities to abuse market power through price and supply manipulation can take on unusual dimensions. Similar and homogeneous service goods with high fixed costs, such as electricity\* (corn and soybeans, for example), cannot be differentiated in terms of origin.*

*We cannot differentiate electrical energy (generated by hydroelectric plants), as to its origin, efficiency, or cost-effectiveness. Since the energy produced by the plants is sent to a single center, the National Integrated System, to then be redistributed to the five regions of the country.*

In Brazil, there are currently 665 large energy consumers that account for the consumption of approximately 30% of all Brazilian electrical energy, in addition, they receive energy at real cost price. For example, mining companies Vale and Alcoa and pulp producers receive energy from the government at four cents per kilowatt-hour, in contracts that last for 20 long years, while the population pays 50 cents for the same amount of energy, according to the Movement of Affected by Dams.

# The Blackout

In 2001, the country experienced problems in the generation of electricity. The frequent blackouts and the threat of prolonged power outages were dubbed by the press as Apagão. An intense campaign to encourage energy rationing was carried out through the media and electricity bills. But to solve the problem urgently, investments on the scale of billions of reais would be necessary. The union then decided that Brazilians should bear the cost of emergency mitigation solutions. An unprecedented and controversial maneuver in the history of energy in Brazil, and perhaps in the world, ensured that this abuse would fall on the shoulders of the Brazilian people. It was Provisional Measure 14, which created the Emergency Capacity Charge (ECE), known as Apagão Insurance, which collected from public coffers, between 2002 and the end of 2005, the small trifle of R\$ 6.088 billion. This amount was intended to cover the rent of thermoelectric plants, contracted in a hurry

and without bidding, to avoid new risks of rationing, as well as reimburse any “losses” caused to electricity generating companies (privatized or mixed capital).

In the midst of this story, a sad curiosity became public: over the years the balance was positive by about R\$ 360 million — an amount charged to Brazilians for energy that was not consumed, and that the government has not yet returned to the taxpayer. To this day, many consumers who were in default, or who obtained injunctions in court not to pay, are now paying taxes. In the last regular year of the tax, in 2005, R\$ 1.377 billion was collected from Seguro Apagão. In 2008, R\$ 8.773 million were collected and in 2009, R\$ 5.4 million entered the Union's coffers. From Seguro Apagão, these multinationals took seven billion from the pockets of Brazilians. It is not our objective to delve into the question of the management of multinational energy generating companies, an extensive subject. For now, it is important to know that billions of reais have been collected by international groups since the privatization of the sector and sent abroad in the form of profit. Money from

Brazilians that left the country and was invested in improvements in the electrical system itself or education, for example. Currently, the electricity sector collects around 15 billion reais annually, a large portion of which is disputed by privatized companies.

Even in the face of large revenues, foreign corporations defer a type of threatening policy to the government, alleging problems arising from rationing and the reduction of profits. One of the many examples is the American PPL Corporation, which filed for bankruptcy and left Companhia Energética do Maranhão (Cemar) under the intervention of the National Electric Energy Agency (Aneel) for 180 days. PPL took over the company with practically no debt, had an income of R\$340 million per month and went bankrupt with a debt of just over R\$800 million.

Researchers and specialists in energy are unanimous in agreeing that the problem in the supply of energy in 2001 occurred due to the lack of planning and investments in the sector. Contrary to what the government claimed that there would have been an unprecedented drought. According to Sauer: “The inflows of the hydrological years – a technical term referring to the volume of water – of 2000 and 2001 were respectively 12% and 5% below the historical average. These oscillations would be perfectly manageable if the operation of the hydraulic system was carried out under the foundations for which it was designed and built.

Célio Bermann, professor of the Graduate Program in Energy at the University of São Paulo

(USP), presents different alternatives for incorporating an installed capacity of approximately 24,000 megawatts into the Brazilian Electric System (more than six times the forecast for Mauá).

The first is related to the technical losses of the Brazilian Electric System, currently around 15% or 54 million megawatts. This includes from the electricity generated by hydroelectric plants, passing through the transmission lines, until it reaches the final consumer. The international standard is 6% losses, which would represent an increase of 33 million megawatt hours. This is equivalent to what a hydroelectric power plant with 6,500 megawatts of installed capacity produces during one year. For this, it would be necessary to improve the insulation on the lines and replace defective equipment, such as transformers. The second alternative concerns the repowering of hydroelectric power plants that are more than 20 years old by changing equipment and modernizing components and systems.

The third considers the generation of energy through Small Hydroelectric Power Plants (PCHs), with an estimated potential of 9,800 megawatts, and the use of wind energy. The Wind Atlas, launched by Aneel and the Ministry of Mines and Energy, estimates Brazil's wind

potential at 143,000 megawatts. The fourth alternative identifies cogeneration from sugarcane bagasse and paper and cellulose as sources and are the ones with the greatest possibilities of use in the short term.

# Popular Action and Public Civil Action

In the midst of uncertainties, two achievements of extreme importance in the environmental and social context to safeguard diffuse rights[1] were foreseen in the Federal Constitution of 1988: the Popular Action and the Public Civil Action. A Popular Action can be filed by any citizen of legal age - who has their civil and military obligations up to date. Popular Action must have legal foundations, and the object of the action must benefit the community - society. The Public Civil Action (ACP) is filed by the Public Ministry - Prosecutors at the State level and Federal Attorneys at the Federal level - or by public entities and legitimate associations such as non-governmental organizations (NGOs) and philanthropic organizations, known as the third sector or organized civil society. The fact that generates the ACP must directly affect society or a certain individual, destined to

defend individual or collective diffuse interests. These two resources were used systematically in the resistance of the Rio Tibagi Protection Front.

[1] \* Diffuse rights: "Legal prerogative whose holders are indeterminate, diffuse. A diffuse right is exercised by one and all, without distinction, its greatest attributes being indeterminacy and indivisibility. It is diffuse, for example, the right to a healthy environment." Academic Dictionary of Law / Marcus Cláudio Acquaviva - São Paulo: Editora Jurídica Brasileira, 1999, p. 286

In this way, we conclude that the second half of the 80's were fundamental in the democratization of the use of natural resources and in the defense of the environment and social interests.

Lawyer Adyr Ferreira, in his work *Damage to the Environment Caused by Hydroelectric*, points out that there have been more than 70 public civil actions at the hydroelectric plants of Rosana, Taquaruçu and the Paranapanema Basin, located in the north of Paraná. The actions, filed against the São Paulo companies CESP and the American Duke Energy, culminated in the mitigation of environmental impacts as well as the repair of socio-environmental damage suffered by numerous municipalities in the region. Adyr highlights the importance of such actions, including as a contribution to recurrent situations. A very positive fact is that the population sought to protect their rights and

the law began to defend natural resources. But the existence of almost a hundred actions in the example given by Adyr reveals that the electric sector policies did not absorb what was determined in the constitution, and continued with archaic and intensely harmful projects, and it is like this until today.

At the end of the 1980s, the hydroelectric project in Altamira, in Pará, in the Xingu region, raised new doubts about the viability of large dams. Hydroelectric projects in the Amazon have attracted a lot of attention from public opinion, especially after the failed Balbina dam, true social and ecological disasters. Tucuruí is another example that also caused dramatic externalities. The impacts caused by Balbina were unnecessary. There, technology allowed other solutions that were less invasive to the forest. The profusion of life was transformed into a mass of submerged, rotting vegetation.

The deforestation of 2,360 km<sup>2</sup> of virgin forest to generate 250 megawatts is indisputable proof of the failures of the electrical system. One of the solutions for Balbina would be the implementation of a thermoelectric plant instead of a hydroelectric

plant. To get an idea, Tucuruí, in Pará, flooded a similar area and produces 32 times more energy than Balbina. These atrocities with the environment fall by the wayside, unfortunately. As a result, errors such as the Mauá plant, on the Tibagi River, are also being committed again. The Balbina plant, in the Amazon, is a historic mistake, mentioned Alexandre Kemenes, a scientist at the National Institute for Research in the Amazon.

Other projects along the lines of Balbina were awaiting approval, such as Kararaô (currently known as Belo Monte) in Xingu. Belo Monte was implanted with strong political and corporate lobbying, and support from the governor of the state of Pará, Ana Júlia Carepa.

To get an idea of the size of the compromising model of the electricity sector, on April 5, the Organization of American States (OAS) asked Brazil to immediately suspend the licensing process for the Belo Monte hydroelectric plant, on the Xingu River”, according to the article. from the BBC. The Avazz website accumulated half a million signatures in a few weeks for the cancellation of the megalomaniac work. The undersigned

was addressed to President Dilma Rousseff. In Tibagi, where the spotlight of the international media does not reach, the claims that began tenuously more than sixteen years ago, have shown over the years the need to reassess the category of the Brazilian energy matrix, considered by international protocols as clean energy. Belo Monte was dragged by force by the powerful, in profound contravention of the federal constitution.

The most notorious work stoppage occurred in October 2012. The Federal Regional Court of the 1st Region voted for the immediate suspension of works in Belo Monte for non-compliance with the constitutional determination that requires public hearings to be held with the affected communities. The work also violates Convention 169 of the International Labor Organization (ILO), which determines prior consultation with the peoples who would be affected by the work.

Filippin's Public Civil Action and Popular Action prevented the first public hearing in the city of São Jerônimo da Serra, scheduled by Ibama. On August 10, 2000, a court official presented the injunction to the Superintendent of Ibama, Mr. Manaus, who

curiously regretted the interruption. Copel and Ibama had agreed on the need to produce an integrated study of the Tibagi river basin. But in practice, the energy company continued to seek licensing approval in isolation.

Anab's lawyer, Gerson da Silva insisted on the importance of the Federal Justice determining to Copel that the Environmental Impact Study be structured for the entire area of the basin. According to Gerson, *Copel is using the São Jerônimo, Jataizinho, Cebolão and Mauá studies as if they were for the entire basin.* While Filippin warned about the suspected fraud in Jataizinho's studies. The state prosecutor's office began to monitor the process and would soon position itself against such undertakings. According to promoter Saint-Clair Honorato Santos, *the concern is with the flooded area, as there will no longer be a clean river without barriers.*

In January 2001, Ibama and Copel held a public hearing in São Jerônimo da Serra, despite legal impediments. There were gathered NGOs, popular representations, the lawyer from Anab, the Public Prosecutor's Office of Paraná, Dr. in chemistry Maria Josefa Santos from the University of Londrina, among others.

At the hearing, attorney Saint-Clair recalled the great social damage caused in Itaipu, on the Paraná River, in Segredo and Salto Caxias, in Iguaçu and the municipalities adjacent to the plants that continue to suffer the same social ills, unlike the compensation

promised by the entrepreneurs. We were discussing for more than a year with the company [Duke Energy] that bought the Capivara development so that it would reimburse the municipalities after more than 20 years, for the social and environmental losses they had in that region (...). Today the municipalities are suffering, in their economy, because of that undertaking. This is what society needs to know, pointed out the prosecutor.

Saint-Clair drew attention to the population's low level of awareness about such undertakings and cited the example of the affected indigenous people in Itaipu and Porto Primavera displaced to settlements where there is not even a river. Other problems denounced concern environmental programs: *I don't know of any hydroelectric plant in the State of Paraná that has reforested the 100 meters around the lake, as required by law. (...). If it is not for a legal fight, this will not happen, as is happening there in Capivara.*

Luiz Eduardo Cheida, Secretary of the Environment for the city of Londrina, was concerned about the quality of the water: (...) *the municipality uses water from the Tibagi, approximately 70% of the population drinks that water. (...) Londrina has no idea what will happen to the quality of the water if the impoundment is carried out.* Cheida would come to have an important position in the state and the power to change decisions about the use of Tibagi's water resources. Meanwhile, a police inquiry was opened in Curitiba due to falsehood in some studies that were carried out during the technical survey in Jataizinho, which according to the technicians should have been a mechanism for canceling the

public hearings. Confronting the concerns that emerged at the hearing that came to pass, Copel consultant Pedro Oliveira Ribeiro warned that *electricity is an extremely necessary asset for modern society, so these issues also need to be evaluated. It is very important to assess the impacts, the damage caused by an intervention of this nature. On the other hand, it needs to be counterbalanced and also analyzed what benefits society has from it.* However, Copel's adviser disregarded possibilities such as an important study from 2000 by the WWF organization that defended the repowering of the installed plants, in addition to the fact that the Paraná rivers generate 25% of the national energy production. At the hearing, student Ana Cláudia asked Copel engineers why the construction of the Tibagi River hydroelectric plant if Brazil sells electricity to neighboring countries? If it sells, it's because it's left over.

*So why destroy nature? Will the power plant benefit everyone or will it be in the interest of a few? The response from engineer José Marques Filho, coordinator of the São Jerônimo Project, was: Today, in Brazil, in reality, we do*

*not export energy to anyone. We import energy from Argentina, Paraguay, we are going to import from Bolivia, from Venezuela. The engineer's short answer did not expose the subtext behind the dictating logic of the electricity sector. Journalist Consuelo Dieguez published an illuminating article in the online media in May 2001:*

*“There is at least one positive aspect of this story that deserves to be mentioned. The threat of a blackout produced an undeniable didactic effect. Some of the energy that people are saving now was pure waste and will likely continue to be saved forever because people have discovered its value. For its part, the government is being forced to face substantive discussions that previously seemed very, very distant. An example is the case of the aluminum industries. More than 70% of what is used to make aluminum is pure energy, a product that, despite being scarce, is still very cheap in Brazil. Even cheaper for companies that have subsidies and pay up to a third of the price paid by residential consumers. Most of the ingots produced here are exported. Abroad, they are transformed into automotive components and equipment that Brazil needs to*

*buy at a very high price. It is the old story of the country that sells raw materials cheaply and pays dearly for the finished product. Does the Brazilian economic model need a shock? In recent years, great wealth, such as that of the software industry, has been built with low electricity consumption”.*

It was clear to some that São Jerônimo, at that moment, in that region of the country, needed a serious reassessment. Different from what Copel engineers exposed. The mantle of uncertainties that hovered in the interior of Paraná gave rise to numerous demonstrations. Among the most relevant is a manifesto by Crea-PR - Regional Council of Engineering and Agronomy of Paraná:

*“The plenary of Crea-Paraná gathered in ordinary session n.º 784, held on this date, January 9, 2001, considering the environmental impact that may cause the construction of hydroelectric power plants along the course of the Tibagi River, by unanimous vote of its members decided adopt a position in defense of the natural heritage of the State of Paraná, opposing the construction of hydroelectric plants on the Tibagi River. Signed by Agronomist Luís Antônio Rossafa, President”.*

The divergence of views made the differences between developmentalists and those concerned with the externalities of such projects increasingly clear. With regard to the Anab action that went ahead, there was only one change of an administrative nature, it was taken over by the

Public Prosecutor's Office. The lawsuit, whose defendants were Copel and Ibama, had a positive outcome with the favorable opinion of the Federal Judge in Londrina, Dr. Adriano José Pinheiro, granting an injunction for the suspension of the environmental licensing for the construction of a hydroelectric plant in Tibagi. Even with legal impediments, the concession was auctioned in June 2001 by the National Electric Energy Agency and bought by a consortium made up in a minority of Copel.

The project is coordinated by civil engineer José Marques Filho, still an employee of the company. In May 2001, Ibama requested complements to the EIA/Rima, referring to São Jerônimo, as determined by the environmental licensing commission of the IAP, however, the requested complementary studies were not presented, having been archived by the federal environmental agency itself. São Jerônimo remains one of Copel's goals to this day. The injunction granted by the Londrina Substitute Federal Judge, Dr. Adriano José Pinheiro, on January 9, 2001 (Documents: 1999.70.01.007514-6) meant a serious victory for the judiciary. During the course of the Mauá case, other judges and prosecutors were convinced of the arguments of the researchers and riverside dwellers.

The participation of society, environmental scientists and authorities such as the Public Prosecutor's Office has prevented environmental agencies, pressured by the power of the electricity sector, from issuing in absentia the necessary licenses for countless power plant projects that lack legitimacy in their studies and have feasibility dubious. At the same time, other fronts were emerging in other corners of the country. One example was the publication of an important document generated by the international organization WWF.

# The WWF Study

The WWF (World Wild Foundation) prepared a respected document that contrasts the discourse of the electricity sector with the aim of presenting immediate and minimally impacting solutions to the energy issue. According to data presented by the organization, the repowering and modernization of large hydroelectric plants would add another 8,093 megawatts to the 109,716 megawatts currently produced in the National Integrated System (SIN). The study entitled The repowering of hydroelectric plants as an alternative to increase the supply of energy in Brazil with environmental protection proposed three alternatives to improve the performance of the matrix in the country without resorting to new mega-dams, in the short and medium term. The first alternative presented, and less expensive, would increase capacity by 2.5% by repairing turbines and generators, recovering part of the original yields of the plants. The second option

would allow gains in the order of 10% in the capacity of old and large hydroelectric plants, but investments should be directed not only to repairs, but also to the purchase of modern turbines and generators with more production technology. The last alternative, which would require more investment, could increase between 20% and 30%.

In this case, the plants would undergo a real renovation with the replacement of all old generators for new ones to guarantee almost 100% of the original energy production. The minimum repowering would add another 868 megawatts to the generation capacity of the hydroelectric plants. The light repowering works completed would improve energy performance by 3,473 megawatts, and by 8,093 megawatts considering heavy repowering. To get an idea, Mauá predicts 360 megawatts and Belo Monte 4,500 megawatts.

An article by the scholar Oswaldo Sevá submitted to the II Social Sciences and Dams Meeting, in November 2007, shows the reality of a people deluded by political propaganda, peoples and traditional communities of the Amazon affected and threatened by dams and harmful policies that favor large groups

concessionaires in the electricity sector. In the document, Sevá rescues some declarations in important newspapers like Folha de São Paulo. In one of these articles, entitled *Industry presses for changes in Ibama. Environment x Investment: Entrepreneurs criticize slowness*, businessman Antônio Ermírio de Moraes, from the Votorantim Group, criticizes environmental agencies and considers it absurd for Brazil to use only 27% of its hydroelectric potential and emphasizes: *Ibama could not interfere in this way. I had to let the gang work.*

In another article in Folha de São Paulo, chemical engineer Nilvo Alves da Silva, assistant to the then Director of Licensing at Ibama, stated when asked about the licensing processes:

*...[hydroelectric plants] are complex undertakings. Some cause resettlement of entire urban populations [Tucuruí were 40,000 citizens]. We work with people's lives. People want to know where they are going, what compensation they will be entitled to receive. And this is dealt with in the environmental licensing... They [businessmen] have always complained. In our opinion, this is nothing more than an attempt*

*to constrain environmental law in Brazil.*

The Votorantim Group is currently lobbying hard to build a power plant on the Ribeira do Iguape river, a major threat to the last remaining forests of the Atlantic Forest, between São Paulo and Paraná. The threatening speeches of the 1980s reappear in the first decade of the century with old actors spreading terror through the mainstream media, but it is actually a recurrence of the reheated text of technocrats such as engineer José Muniz Lopes, at the time director of Engineering at Eletronorte, who said in an interview on TV Cultura, in 1989: *...or hydroelectric plants in the Amazon – or nuclear, I agree with both.* Seva's document also draws attention to comments by journalist Sardenberg and President Lula seeking to dismiss the concerns of the indigenous peoples of the Xingu. Lula said, dissatisfied, that it was not possible to have a solution for catfish (referring to the food of the indigenous peoples of the Xingu). He added: *But why don't the solutions come out?... but Ibama doesn't seem to be in a hurry.... It happens that the legislation, the culture and the structure of the environmental*

*agencies block the solutions.... The value of the benefits can perfectly justify the environmental loss.*

# environmental damage

The integrated studies are equivalent to the study of the various social, economic and environmental aspects along the basin, seeking to make the hydroelectric projects as little impactful as possible. Therefore, it does not treat an enterprise in isolation, since the process of cause and effect is extremely sensitive along the river basins. The effects are not the sum of the damages, but the multiplication of these impacts. Damage caused upstream often has an unpredictable impact downstream. In practice, the behavior of the electricity sector is the fulfillment of such studies merely for protocol purposes. Such legal interventions are generally publicized in the mainstream media as impediments or impediments to development. Many of the studies are still criticized as exaggerated formulas constructed by researchers and technicians in the environmental and social areas. Currently, social mobilizations such as those in the Tibagi and Xingu basins have echoed across the country.

Much socio-environmental damage due to large dams was generated in the interfluvium between the emergence of large works in Brazil and the improvement of environmental legislation.

The complex legislation built with iron and fire has been useful to delay major disasters in nature, which by political forces end up being imposed on the nation using the fait accompli strategy.

One of the examples of the dramatic consequences of building mega-dams without serious and integrated reflection is the Porto Primavera Power Plant, installed on the Paraná River, in the municipality of Rosário in São Paulo. The dam, which has most of its lake (80%) in Mato Grosso do Sul, is considered the third least

efficient plant in the world. The work was carried out in a hurry, even with the assiduous intervention of the population and the Public Ministry. As well as the projects for power plants in Tibagi, especially Mauá. The lake, formed by the damming of the Paraná River, is seven times the size of Guanabara Bay and 25 thousand hectares more than the Itaipu lake. The most dramatic thing was that the dam flooded one of the last remnants of the Atlantic Forest in that region. In November 1998, the São Paulo Energy Company (Cesp), owner of the work, began filling the dam.

It is believed that the government of São Paulo spent 19 billion reais, in twenty years, to build the Porto Primavera Hydroelectric Plant. It is worth mentioning that with all this public money spent in an unruly manner, the work is still incomplete, as only 14 turbines, of the eighteen planned, are installed. With the fable worn out, it would be possible to build approximately 400,000 medium-sized public schools, for example. With this work thousands of endangered species disappeared forever.

The site also guarded archaeological gems, in all 118 sites containing frescoes dating back thousands of years. It also housed 1,729 riverside families. The flood did not spare 77 islands on the Paraná River, one of the largest archipelagos in Brazil. Even Comprida Island, 18 kilometers long, was almost completely drowned.

The maneuvers carried out by Cesp, under the presidency of Ângelo Andrea Matarazzo, in 1999, are the most obscure possible. The argument presented by Cesp was that not filling the dam would cause a blackout in the Center-South region of Brazil. This is an argument often used by the electricity sector when it feels pressured in some way. Blackout terrorism is a cunning resource that still works efficiently to mobilize public opinion in favor of dams.

The energy produced by the Porto Primavera hydroelectric plant would be replaceable if plants such as Jupiá and Três Irmãos operated at the capacity foreseen in their projects and had all their turbines installed, according to research. Solutions are often far less expensive and less complicated. However, the option has been for the most expensive, therefore, the most profitable. The Organization of Lawyers of Brazil (OAB) stated that the filling of the lake at the Porto Primavera hydroelectric plant was an environmental disaster without precedent in Brazil, affecting 22 amphibian species, 37 reptiles, 298 birds and 60 mammals, many of which are threatened

with extinction, in addition to erosion and silting of the river, compromising the quality of the water and generating problems with the lake's oxygenation.

Damage to nature and especially to local communities and environmental demands are just stumbling blocks for Cesp, Copel or any other company in the sector. The electricity sector's strategy is not governed by legislation, common sense and ethics, but by greed, which ends up making dialogues between society and electric companies incompatible. The few large animals rescued and relocated were taken to nearby areas, where livestock is encroaching on nature. Some large mammals, such as jaguars, after being captured, received a chip that tracked their location. As they eventually began to feed on livestock, breeders, in turn, began to hunt these animals to their complete extinction. After the dead animal, according to reports, they were burned and buried. Thousands of Pantanal Deer lived in the submerged region, more than a hundred Black and Brown Jaguars - one of the last communities of these animals - and many others such as howler monkeys, capuchin monkeys, ocelots, anteaters, possums, opossums, pacas, agoutis and armadillos , who were left to their fate, disappearing forever under the waters of Porto Primavera. Thousands of plant species, many endangered, will also never be seen or observed again.

Due to the low oxygenation of the lake that formed in Porto Primavera, there was a dramatic impairment of aquatic life in the Paraná River. Fishing has become an unfeasible economic activity in many parts of Greater Paraná. In Jupiá, the fishing district of Três Lagoas, many fishermen have abandoned this way of life.

Many environmental reserves disappeared from the map without leaving any trace, such as Lagoa São Paulo, one of the richest ecosystems in the world. In addition, several municipalities were completely submerged, forcing the community to flee the filling of the reservoir.

In places close to where these predators were exterminated, tapir and capybara populations grow unbalanced and destroy important plant species. Capybaras then reproduced in excess,

attacking crops and contaminating cattle with Rocky Mountain spotted fever, the tick-borne disease. Nature cannot be seen in an isolated and linear way, an impactful event always causes a series of others in a chain that propagates in space and time. Without respect for natural resources, society is pushed towards the abyss.

According to environmentalist Djalma Weffort, *the work is bad, but without the struggle of environmentalists it would be much worse. Over the years, we managed to have stairs and a fish elevator (it is the first dam in the country with this structure), the reduction of the fixed flood quota from 259 to 257, saving large areas of varjão and we want to create conservation units in the five main tributaries of Paran  - Verde, Taquaru u and Pardo (MS), Aguape  and Peixe (SP) rivers, since they have become places of fish migration and natural escape channels for fauna.*

In Porto Primavera, economic interests prevailed over the needs of citizens and the need to preserve one of the last preserved ecosystems in that region of the country. Grando and Filippin faced a similar story of socio-environmental injustices in Tibagi. During the construction of Porto Primavera, an important legal mechanism emerged, the Lei das  guas. This is how Law No. 9,433, created in January 1997, came to be known, which instituted the National Water Resources Policy. The objective was to protect the use of water as a public good and a limited natural resource endowed with economic value. This legal instrument also provides that the management of water resources must provide for the multiple use of water, in a decentralized and participatory manner, with the participation of the Public Power, users and communities.

# The Law of the Waters

The State of Paraná was a pioneer in the creation of a Forestry Code, Law n. 706, of April 1, 1907, which already established protective forests as of public utility. If this law had been complied with, it would consequently protect the waters. However, as observed by Romário Martins, one of the creators of this law, this code was merely a decoration of Paraná legislation.

The first federal forest code appears with decree n. 23,793, of 1934. Here the forests were recognized as elements of conservation of the water regime. That same year, Decree No. 24,643, known as the Water Code, was created, with specific regulations for the conservation of water resources, whose execution was the responsibility of the Ministry of Agriculture. Decrees No. 75,566 of 1975 and No. 1,348 of 1994 were updates in public water management.

In 1964, the Forest Code was created based on more elaborate and careful scientific studies that rigorously covered the maintenance of riparian forests, whose consequences are direct in the preservation of water quality.

And finally, at the turn of the century, Brazil instituted, through the Water Law, that water was an essential and necessary good for the quality of life that should be rationally shared among the different user sectors – urban, domestic, agriculture and industrial. In 2000, three years later, the ANA was created to manage the new water policies. As mentioned in the third article. The National Water Agency - ANA is hereby created, an autarchy under a special regime, with administrative and financial autonomy, linked to the Ministry of the Environment, with the purpose of implementing, within its sphere of attributions, the National Policy on Water Resources, integrating the System National Water Resources Management. (Law 9.884, Article 3th)

According to item 7 of article four of that law, ANA should support the creation of River Basin Committees. Such committees, in turn, would be formed by representatives of the state and organized civil society, which would interfere in decisions about water use.

The sharing of water resources would be defined by a management system under the responsibility of the River Basin Committee. The logic of the Water Law instituted that water users, populations, research institutions, industries, governments, NGOs interact in the management of this resource through the basin use plan. Before the law, the electricity sector, which until then was hegemonic in defining how water should be used in legal terms, ceased to be hegemonic.

However, decisions in licensing processes were still under the political influence of entrepreneurs, who in the history of Brazil have always been illicitly above the constitution itself. In Tibagi, the watershed committee, created by state decree Nº 5790, started with majority representation of political autarchies. The representatives of society's interests, the NGOs, have not been able to make the committee act impartially over the years. Time has shown that the committee was yet another investment of public resources to legitimize irregularities in the electricity sector. In the same period, the World Commission on Dams was created, an entity formed by the organized sectors of world civil society, entrepreneurs, international financiers and national governments, with the aim of discussing fairer and more sustainable criteria for the construction of these large infrastructure works, according to Filippin.

*Glenn from the International Rivers Network, explains that the demand for expansion comes mainly from electricity-intensive companies, such as Alcoa, Vale, the nickel and metallurgical industries. The installation of new factories depends on the increase in energy supply. Alcoa, for example, is closing factories in several countries. Their message to the government is: as long as there is cheap energy, we will stay here. If not, we leave, explains Glenn.*

## the strategy

The shelving of the Jataizinho, Cebolão and Mauá projects in 2000 represented a worrying setback in terms of the researchers' and Anab's inquiries ([Documento 09](#)). Stocks that prospered now were in danger of losing part of their object.

This maneuver provided advantages for Copel that two years later would redeem such projects for new licensing, only this time legally unobstructed. Asking for projects to be archived and then to start them was one of the electric sector's alternatives to circumvent possible legal impediments. Around 2002, the archived studies, and also São Jerônimo, returned to the table, at the request of Copel ([documento 10](#)). The Copel and Ibama defendants cited in the Anab action were forgotten and the dirt swept under the rug. In 2002, still in the Lerner government, a dispatch by the agronomist Pedro Luiz Fuentes Dias, head of the licensing department at the Environmental Institute of Paraná,

pronouncing on the need to carry out an integrated study of the Tibagi basin, showed the concern of the public authority about such undertakings.

Ten years later, Fuentes would still defend his convictions. Therefore, the interruption of Jataizinho, also demonstrated a concerned and responsible attitude of the environmental agency of Paraná, the Iap. At the federal agency Ibama, the licensing request for São Jerônimo did not prosper, with a negative opinion from the technical team, in July ([Documento 11](#)).

In 2003, Dr. Regina Barcelar, Copel's legal attorney, called researchers to negotiate resistance. The suggestion made by the attorney was that all these studies that had been questioned as to their reliability could be used for a possible integrated study of the Tibagi basin. That is, the clear intention continued to use the same studies questioned since 1996 for Jataizinho, among others. Concentrated efforts ceased between 1999 and 2002. However, Tom and his colleagues' interest in maintaining the original texts continued, even if some of the energy expended was lost. The articulations of the

electric sector continued looking for a way out of the imbroglio that they themselves created. Copel was aware that the original texts, if presented to Ibama and IAP, could put an embargo on both the Jataizinho and São Jerônimo developments, and thus set precedents for the conservation of the Tibagi basin to be a matter of concern again (**Documento 12**).

Dr. Regina Barcelar's arguments that Copel would be interested in carrying out an integrated basin study, however, had already been requested by Anab in the lawsuit and had already been claimed by the IAP. The researchers, however, did not give in because they insisted on using the original and basic information from the studies, and not the study modified by Copel. The researchers were also reticent about not allowing the contracting of new studies, as there was nothing to guarantee that the company would accept new research.

Months later, a company employee, responsible for institutional partnerships in energy projects, named Sérgio Cramer, called the researchers for a conversation to explain the reason for the emphasis on licensing São Jerônimo right in the middle of the basin. He also emphasized the priority that the Tibagi had over other rivers such as the Ivaí and the Piquiri.

From the strict and isolated perspective of energy use, the river has a privileged constancy in the volume of water and unevenness. Among other characteristics, this hydraulic stability that the water overcomes to leave the springs to the capivara dam, the region where the mouth of the Paranapanema, on the border of Paraná and São Paulo, was, confers countless hydrological privileges on the Tibagi projects. From the perspective of the Water Law, which advocates the multiple use of water resources, the approach taken by the Copel representative defended the company's specific interests. Sergio Cramer was not convincing to Tom and his colleagues, who remained incisive in their opinion that it would be unreasonable to carry out any undertaking in an isolated manner in

Tibagi without highlighting the social, anthropological, environmental and productive values of that region.

# Research at the University of Londrina, 2002

In September 1989, the first surveys of a program that became known as the Tibagi Project were carried out. Thirteen years later, relevant amounts of information on the most diverse science topics had been mined in the basin as a result of this initiative. The concentrated effort that came from the University of Londrina had a contingent of more than 50 specialists. Doctors, masters and students collaborated with the intent. Oscar Shibatta, Sirlei Bennemann and Kimiye Tomasino are some of the researchers who would join forces in defense of Tibagi. In 2002, Moacir Medri, Edmilson Bianchini, Oscar Shibatta and José Pepper edited a book that compiled years of research at Tibagi, a total of 596 pages of information on soils, climate, anthropology, vegetation, fish fauna, mammals, aspects of conservation, among others. Research confirmed the intense level of degradation in the region studied. However, the surveys also confirmed that there were rare forest remnants and ecological conditions that favored the conservation of biodiversity.

Positive social situations were also observed in anthropological studies. The same environmental and social qualities had surprised both the team at the University of Londrina and the consultants at the Museu do Capão da Imbuia. But revealing discoveries were yet to come, with the Expedition Pelo Tibagi.

# The Tibagi Expedition, 2003

In April 2002, the NGO Liga Ambiental, a non-profit civil organization in Paraná, was restructured. There were changes in the coordination and admission of new members and a new professional body took over. Tom Grando, elected coordinator, and Filippin, Gislaine, Marcos Bornschein and Bianca, as new associates, took over the organization. Now Grando, Filippin and their colleagues managed a recognized and supported NGO, and also had a headquarters. Tibagi could now count on citizens who were determined to carry out actions systematically. The Environmental League was founded in 1991 with objectives that were not specifically to address issues in the electricity sector and its impacts. Now that would be the main line of action of the institution. Currently, the League is an organization recognized for its competence with regard to questioning mega-dams on the Tibagi River and other rivers in Paraná such as the Iguaçu, Ribeira and Ivaí. Other organizations, associations and citizens have followed the efforts undertaken by the League to enforce the Water Law, among other legal protocols for the protection of rivers.

By a curious coincidence, before the founding of the Environmental League, the founder of the NGO and former institutional coordinator Jose Álvaro Carneiro and partner Zuleica Nicks had just approved a project to recognize the entire basin. This project met the League's new concerns. The objective of the project was to record what the Tibagi River is and to take the images captured during an expedition to schools and the general public that would rescue the importance of the river integrating populations (as a cost containment measure, the Requião government interrupted the project in production and distribution

phase of the educational material). The surveys included studies of fauna and flora, situation of riparian forests and silting, pollution, sand exploration, energy viability, tourist potential and data on riverside communities.

The League, focused at the time on policies for the use of water resources, mainly in the Tibagi basin, signed a contract with the government of the State of Paraná to carry out the Tibagi Expedition, in 2003. The knowledge accumulated by Grando and his colleagues on the river contributed to the purpose of the expedition to prepare an inventory of biodiversity and studies of socio-environmental relevance along the entire length of the river. The Tibagi Expedition could not be reported here due to the profusion and richness of facts and discoveries.

In 2003, the NGO Liga Ambiental carried out the audacious and successful expedition of boats from the sources of the Tibagi to its meeting with the Paranapanema. There were 616 kilometers covered in 18 days. The expedition was composed of Tom Grando (biologist), as coordinator, Marcos Bornschein (biologist), Bianca Reinert (biologist), Franco Amato (cartographer), Marcelo (sociologist), Rafael Filippin (lawyer), Gislaine Cova (biologist), Francisco Lange (agronomist), Alessandro Casagrande (agronomist), Ivã Avi (specialist in expeditions), Josemar (specialist in rapids) and Baianinho (fisherman from Tibagi), there was also the assistant André. It was at that moment that the story of Tibagi began for me. I was the 13th member. At the time I was invited by Tom to make the video recordings of the expedition. It seemed like a great opportunity to register a side of Paraná that I didn't know much about. It had not gone down a river in its entire length. It was an environment that I only knew on trips through Campos Gerais to the region of the fields of the city of Tibagi. Except for Tom and Baianinho, the other members were also unaware of Tibagi.

The scientific onslaught was divided into two stages. In December 2002, it was traveled from the source to the municipality of Ortigueira, completing a distance of 300 kilometers. In the second stage, in January 2003, another 316 km were traveled to the city of Primeiro de Maio, in Paranapanema. GPS records updated the length of the river to 616 km, from the sources to the meeting with the reservoir of the Capivara dam, an undertaking erected by Cesp in the 1970s over the mouth of the Tibagi and Paranapanema rivers.

The trip from the source to the navigable stretch of the river was covered on foot during one day. From then on, in the navigable part, the team remained in the boats for the whole day, stopping only for scientific observations, cartographic measurements and photo and video recordings, in addition to meals.

Navigation often continued into the night. Tibagi continued to be an unknown world, but somehow it also became a companion, an ally, which carried us with its turbulent waters to our destination.

The surprising discoveries and scientific surveys made by the team in the Tibagi Expedition, proved the relevance of the last fragments of forest in the center of the interior of the state. The details, surprises, challenges and moments of extreme danger that took place on the Tibagi Expedition would not fit in this book. Only the scientific relevance of this challenge and his collaboration in the years that followed are recorded here. After the expedition, an anthological article was published in the newspaper *Gazeta do Povo* confirming mega-biodiversity areas for the Tibagi River and the need to rethink energy policies for this important river. At that moment, when the Jataizinho project evolved into a scenario of uncertainty for Copel, a desperate event occurred. Several other hydroelectric projects were submitted for licensing: São Jerônimo, Jataizinho, Cebolão and Mauá scheduled for the upper and middle Tibagi.

If they were taken forward, it would be the summary end of the Tibagi River. In the same year, the Environmental League was elected to compose the Tibagi River Basin Committee. The NGO would become one of the representatives of society with decision-making power over the use of water in that region.

# Copel's intentions

The profusion of facts that took place until mid-2003 shaped, by force of circumstances, the understanding of a community of citizens with a high level of knowledge about matters related to the electricity sector and the use of water: they are technicians in the environmental area, researchers from the University of Londrina , the Environmental League, Anab, philanthropic entities, the Tibagi basin committee and active citizens, in addition to the Public Ministry. At that moment, resistance gained more strength and established an interaction that began to echo with intensity in the mainstream media and demand more attention from the electricity sector and the environmental agency. During this same period, there was a change in Copel's strategy to give continuity to the plan to build the staircase of dams on Tibagi. The dam projects are shelved at the request of the Companhia Paranaense de Energia and a political vacuum left in latency for a year the priorities of the electricity sector that returned in 2004 bringing an unprecedented set of illegalities, the Copel Case.

# Myths adopted by the Electric Sector

**Without energy, Brazil will be stagnant:** No. Generating energy is a lucrative business with BNDs loan and guaranteed by the government.

**Hydroelectricity is renewable energy:** Yes, but that doesn't mean it's beneficial or environmentally and socially sustainable. Large projects cause irreparable environmental catastrophes.

**Dams generate jobs in municipalities adjacent to the work:** A minimum amount. Barrageiros, as they are known, are workers who travel around Brazil working on infrastructure works. A large work can hire more than 1,500 dam builders. Locally, hiring does not exceed one or two dozen. Jobs are temporary.

**Once completed, the Plant will generate jobs:** Very few. The plants are automated and can be controlled hundreds of kilometers away. The small technical staff comes from outside and is filled by professionals with specialized training.

**Will the plant bring development to the municipalities where the dam is located:**  
**No.** The municipalities that have dams continue to have problems in education, sanitation, health, water quality and work. Those who depended on the river for their sustenance became cheap labor. The city receives royalties that are often poorly managed and bring

little improvement to local municipalities.

**The dam's lake attracts tourist opportunities:**

The tourist options, when they exist, are explored by capitalized investors responsible for luxury subdivisions or condominiums and contribute little to local income. Any well-exploited river for tourism can bring more benefits than a lake.

**Will the interruption of works cause damage to the national economy:** No. This argument is commonly used in works that are interrupted or questioned by law.

**The lake will provide for fishing activities:** Not in a way that privileges local communities. The lake will lend itself to sport fishing. Noble fish become rare over time. Commercial activity becomes extinct, since the lake does not have sufficient concentration of oxygen to maintain economically viable populations.

**Will such a plant produce energy for a city of 1,000,000 inhabitants:** No. This is an argument widely used by the electricity sector. In Brazil, there is no city of one million or one thousand inhabitants without electricity – with the exception of isolation. The energy produced will go to the Integrated National System and from there it will be redistributed to the various regions of the country. Around 30% is destined to electro-

intensive industries.

**Brazil needs energy: Not in the way it is advertised. The biggest stakeholders in energy are the corporations that profit from these ventures. Other stakeholders are politicians who have their campaigns financed by contractors and large groups linked to the construction of power plants.**

**Will everyone be compensated for losses in flooded areas: No. It is common for squatters and landowners to wait years to have their rights recognized. Many are not compensated for lack of property documentation.**

## LINHA DO TEMPO

## LEGENDAS

## Ações na Justiça

Atos inconstitucionais

## Manifestações civis

### Intervenções e influências políticas

## Acontecimentos importantes

1984 - Elaborado o Plano de aproveitamento hidrelétrico do Rio Tibagi pela Copel.

19xx - Elaborada a  
Carta de Londrina  
pela Universidade  
Estadual de  
Londrina (UEL).

1989 - pesquisadores da UEL fazem descobertas científicas na fazenda Doralice, margens do Tibagi.

Copel procura pesquisadores no Museu do Capão da Imbuia, Curitiba, para o projeto Jataizinho

Início dos estudos em Jataizinho pelos pesquisadores para a elaboração do EIA/Rima.

Pesquisadores  
fazem descobertas  
no Tibagi.

Jornal Folha de Londrina publica descobertas.

Criação da Lei das  
Águas.

Ano de criação da  
Comissão Mundial  
de Barragens.

Copel falsifica estudos EIA/Rima.

pesquisadores  
denunciam  
ilegalidades ao  
Ministerio Público  
Estadual.

IAP assina despacho interrompendo o processo de Jataizinho.

1984 - 1995

1996

1997

09 janeiro - Ação  
Civil Pública da  
ANAB / réus:  
Cnec, Copel e  
IBAMA.

Ações solicitam a realização de Avaliação Ambiental Integrada para a Bacia do Tibagi. No processo judicial, COPEL e IBAMA concordam em, arquivando os estudos de impacto anteriores.

2002 - Ignorando as determinações em 2001, o CNEC Engenharia iniciou um processo de licenciamento para o Projeto Mauá junto ao Instituto Ambiental do Paraná - IAP.

2003 - Liga Ambiental realizada a Expedição pelo Tibagi com apoio do Fundo Estadual do Meio Ambiente do Paraná.

março - O governador do Paraná, Requião encontra-se com a Ministra Dilma para negociar Mauá.

22 abril - Comitê da Bacia do Rio Tibagi nomea Lig Ambiental.

05 outubro -  
CNEC assumiu a  
responsabilidade  
pela conclusão dos  
estudos de Mauá.

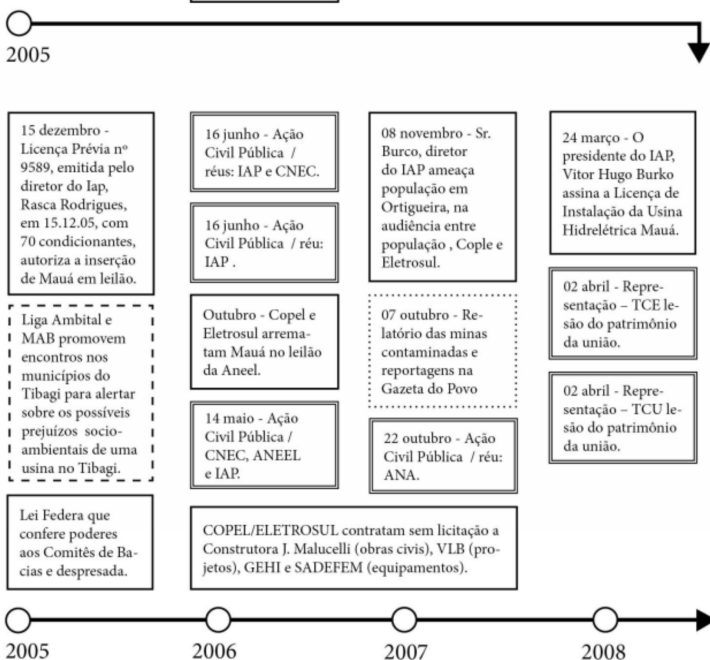
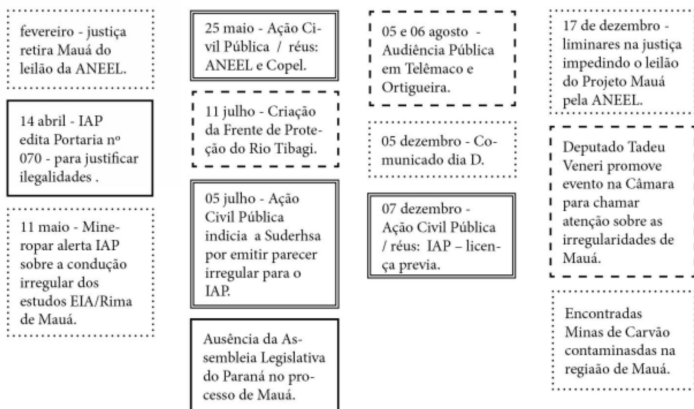
03 dezembro - CNEC entrega ao Instituto Ambiental do Paraná o documento final EIA/RIMA.

Licenciamento do IAP contraria Constituição do Estado do Paraná, a Resoluções 003/04 da Secretaria de Estado do Meio Ambiente – SEMA e a Portaria 120/2004 do próprio IAP.

2001

2002 - 2003

2004



18 abril - MC  
Ação Civil Pública  
/ IAP e CNEC.

02 maio - Carta  
Precatória / IAP,  
CNEC e IBAMA.

19 junho - Ação  
Civil Pública /  
IAP, CNEC e  
IBAMA.

????17 maio -  
Ação Civil Pública  
/ União, Funai,  
Cruzeiro do Sul  
(Copel e Eletro-  
sul).

18 julho - A  
liminar que  
condicionava a  
implantação da  
hidrelétrica Mauá  
à realização de ava-  
liação ambiental  
integrada prévia  
em toda a bacia do  
Tibagi foi suspensa  
por despacho do  
presidente do  
Superior Tribunal  
de Justiça, ministro  
Humberto Gomes  
de Barros.

21 julho - O Con-  
sórcio Cruzeiro do  
Sul expediu ordem  
de serviço para  
a construção da  
Usina hidrelétrica  
de Mauá pela J.  
Malucelli.

22 julho - o consórcio  
Cruzeiro do Sul  
(Copel e Eletrosul)  
emitiu a ordem  
de serviço ao consórcio construtor  
responsável pela  
implantação da  
usina. As primeiras  
ações no local  
incluem a limpeza,  
terraplanagem e  
organização do  
canteiro de obras e  
dos alojamentos.

julho - Início das  
Obras de Mauá, no  
Tibagi.

03 novembro - A  
Ong MAE pro-  
tocolou na Justiça  
Federal, uma ação  
civil inibitória  
contra o Consórcio  
Cruzeiro do Sul e  
a União Federal.  
A alegação é que o  
empreendimento  
irá comprometer a  
qualidade da água  
do rio, que abastece  
Londrina.

O governo do  
Paraná descumpre  
norma constitu-  
cional na construção  
de Mauá.



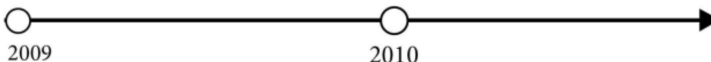
16 março - Ma-  
nifestação em  
Jataizinho / dia da  
8 Celebração das  
Águas.

06 dezembro - Irmã  
Rosa promove  
manifestação em  
Telêmaco Borba.

17 abril - Ação Ci-  
vil Pública/ terras  
indígenas kaingang  
e Guarani / réus:  
União, Funai, Cru-  
zeiro do Sul (Copel  
e Eletrosul).

Aprovado pela  
Assembleia  
Legislativa do Pa-  
raná o parecer do  
deputado Ademar  
Traiano, acusando  
o governo do Para-  
ná pelo descumprimento de norma  
constitucional  
na construção de  
Mauá.

15 abril - Assem-  
bleia Legislativa  
aprova requeri-  
mento pedindo  
suspensão das  
obras da Usina  
Mauá.



# PART THREE

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## THE COPEL CASE

# The hire, 2002

In 2002, the company Cnec Engenharia S.A. (Consórcio Nacional de Engenharia), belonging to the Camargo Correia group, headquartered in São Paulo, hired two consultants, one to deal with the technical feasibility study and the other to account for the environmental impacts of the project. from the Maua plant. The development was scheduled to be built between the municipalities of Telêmaco Borba and Ortigueira, in Paraná. A wall 85 meters high and 745 meters long was in line with those plans for hydroelectric use in the 1970s. agricultural properties and indigenous areas.

The company Cnec Engenharia, contractor for the technical services, arrived at IGplan, Intelligence Geographic and Planning, through an employee of the Cnec itself named Leo, who knew the responsible work of the consultancy. With recognized competence, excellent technical references in the elaboration of the Environmental Impact Study (EIA) and the location in Curitiba could speed up the work and speed up the procedures so that the Mauá plant project could proceed.

In meetings with the representative of the Cnec, the managing partner of Igplan, Francisco Lange, stated and emphasized that his team was composed of rigorous professionals. Lange expressed his concern beforehand considering the seriousness with which hydroelectric power plant projects must be taken. He also emphasized that he would carry out an Environmental Impact Study, but these studies would have to be carried out in the light of technical rigor and legislation. Agreeing with the prerogative, Cnec Engenharia contracted Igplan for the Environmental Impact Study for the Mauá plant, in 2002.

Lange looked for the right person for the job, it was Tom Grando, an experienced and reliable consultant whose mission would be to coordinate the team for the Mauá Environmental Impact Study. Tom was back on the banks of the Tibagi, at that moment with more than thirteen years of accumulated experience,

including previous studies of power plant projects for Tibagi himself, consulting for an environmental agency and acting in public policies for the NGO Spvs. The biologist also continued to exercise his role as institutional coordinator of the Environmental League.

Grando had participated in those studies for the Jataizinho, Santa Branca and Cebolão projects commissioned by Copel and later archived by Ibama at the request of the energy company from Paraná. As in other studies for large dams. For example, in Salto Caxias on the Iguaçu River, the coordinator sought to bring to the Mauá project the legal commitments for this type of undertaking and the multiple use needs of the hydrographic basin, in accordance with the Water Law.

The biologist sought to conduct the project in line with the concerns of the Tibagi River Basin Committee. The Committee is a collegiate body linked to the Secretariat for the Environment and Water Resources of the Government of Paraná and the National Water Agency. Tom knew that combining coherence and energy production had always been unattainable challenges for the electricity sector.

Here began an unpredictable odyssey. Shortly after IGplan started the studies, there was an interruption of activities for internal reasons at Cnec. Activities were resumed in July 2004, a gap of two years, in the same month in which the laws of the New Model of the Electricity Sector were published. Due to contractual issues, the deadline for completion was short, no more than three months.

Mauá is one of seven power plant projects conceived by Copel in 1984 for Tibagi. The impacts of the seven projects planned for a hydrographic basin are not exactly the sum of such conditions. The ecological and socio-environmental effects are the multiplication of damages, a kind of ecological effect on an exponential scale. There is a type of study relevant to this situation, called Integrated Environmental Assessment (AAI), which is more appropriate and capable of establishing a study of the numerous ecological, economic and social factors and variables throughout the basin. The possible impacts of a set of dams are not present locally, but throughout the hydrographic macro-region, given the size of such undertakings. The integrated study had already been proposed previously by Anab's public action, filed in 2001.

Isolated assessments would not reflect reality, and Tibagi would run a serious risk of becoming a water desert from this point of view.

Grando and the team of consultants hired by IGplan were aware that the impacts should be addressed in a more global way for the Tibagi Basin, and not just for the region of Telêmaco Borba and Ortigueira, the place planned to build the 85-meter high wall. height and 745 meters long. There was one more extremely important element to be highlighted: the Mauá development was planned for the last region of mega-biodiversity in Paraná.

Precise scientific data were collected during the Tibagi Expedition in 2003, and later such knowledge about the basin's megabiodiversity was recognized by the scientific community. It was relevant information that Grando and the group of researchers already understood well, and that could not be neglected in any way in the IGplan studies.

At that moment in the history of Tibagi, the NGO Liga Ambiental was immersed in the issue of the multiple use of water. There was no lack of reasons for the League to mobilize and delve deeper into questions for change in the uncompromised way in which the environment and society were, and still are, treated by the policies of the electricity sector.

The team formed to prepare the EIA began work in 2003. In December of that same year, after 8 months of activities, the researchers had completed the stage of field work in the region between Telêmaco Borba and Ortigueira. This was the time for the consolidation of the studies that proceeded with due punctuality. However, internal problems at IGplan caused a delay in activities.

This change in the schedule prompted the intervention of Cnec Engenharia through two professionals who were sent to Curitiba in order to help with the consolidation of studies: Kiki, who did a kind of internship at IGplan, and Ronaldo Crusco, a professional who had

already participated of many environmental impact studies. Both were selected to work alongside the team of consultants. The two Cnec technicians, however, began to make a series of observations about the content of the studies, an intervention that Grando's team considered inappropriate. The suggestions were visibly intended to mitigate the environmental impacts indicated in the consolidation of studies. For Grando, this meant omitting very important and obvious aspects highlighted by IGplan technicians.

### **(documento 13)**

Cnec then intervened for the second time asking director Lange that the consolidation be sent to the company's headquarters in São Paulo. IGplan, pressured by contractual clauses, sent the studies that had not yet been finalized.

The Cnec was in a great hurry, probably in the hope that the environmental agency would issue the preliminary license in a timely manner so that the Mauá project could participate in the next Aneel auction, scheduled for 2005. IGplan then sent the consolidation of the anthropology studies, the fauna and vegetation. Although not finalized, the documents presented all the criticisms of the Mauá plant project and all the suggestions for adapting and minimizing the impacts that the plant could cause. In São Paulo, Cnec technicians, with the documents in hand, made a series of "suggestions" to eliminate a huge number of environmental impacts listed in the studies and to change several texts. The report was then sent again to Curitiba, so that IGplan could make the necessary adjustments to consolidate the environmental impact studies in accordance with the interest of Cnec Engenharia. This was in mid-February 2004. At this stage, the attitudes of the Camargo Correia subsidiary became predictable for Grando, as something similar had occurred with the studies carried out in Jataizinho, in 1996, and in

Salto Caxias, on the Iguaçu River, in 1994.

In both situations, the contracting companies had sent corrupt reports to the environmental agency, in order to make the environmental impacts mild or non-existent. Tom Grando then warned Lange to take some measures, as the biologist predicted that the same thing would happen in the Mauá plant project. It was there that Francisco Lange and the technicians, aware of past experiences, registered the original fauna and physical environment studies and other documents related to the Mauá project and the Cnec (records in 2 RTD – Curitiba/PR microfilms - 930385, 930386, 931600, 931601). IGplan would thus be assured of the reliability of its studies. Coordinator Grando, together with Lange, did not agree with a series of distortions and omissions in the original studies. Cnec had removed elementary texts from the documents.

The consultants in Curitiba were aware that the studies had shown very serious environmental impacts, which could even make the Mauá project economically unfeasible, if the licensing body accurately evaluated the final report. The EIA as conceived would make it clear to IAP technicians that the Mauá plant would be a project with colossal environmental impacts that could not be mitigated if the recommendations present in the documents were not considered.

In the meantime, in February 2004, Lange and Grando were in São Paulo at the Cnec headquarters to re-discuss the final content of the EIA. There, the company's staff gathered with all the pomp of Camargo Correia, owner of Cnec Engenharia, put enormous pressure on IGplan to accept the proposed conditions. The only topic in the meeting minutes refers to the Cnec's disagreement with the final content of the report. At the meeting, Lange and Tom disagreed about changes to the report and requested that the original studies registered with a notary's office be attached in full along with the change requests proposed by Cnec Engenharia. Tom and Lange were surrendered to the Cnec technicians and directors, who clearly defended the entrepreneur's interests and were reluctant to carry out the original reports. It was a very tense meeting, very exhausting for everyone, but especially for us, remembers Tom. On October 5, 2004, the contract was terminated with IGplan, on that occasion the company Cnec assumed responsibility for completing the work, which would be delivered to the environmental agency two months later.

# Cnec delivers corrupt document, 2004

In March 2004, Tom Grando was interviewed, as institutional coordinator of the Environmental League, on a television program, cable TV in Curitiba. The biologist's testimony presented an extensive argument about the impacts caused by large dams. An emotional impulse led Grando to express the concerns that had accompanied him since his first work in 1996, in the Tibagi basin. This television program came to the attention of Kalil Farran, a Cnec employee. Days later, Tom received a call from São Paulo at his home, it was late at night.

On the other end of the line was Kalil - probably bothered by the report -, asking for a private and urgent conversation with the consultant. (It is important to remember that a project like Mauá, whose cost is more than one billion reais, arouses a lot of interest). A few days later, Kalil was in front of Grando at IGplan's headquarters in Curitiba. In the conversation, he perceived in the biologist an accumulated knowledge about the Tibagi River that should be highlighted.

The Cnec employee also considered the systematic role that the biologist carried out as institutional coordinator of the Environmental League, an NGO that had already been working on water issues and use for some time. Tom Grando also realized that he was in contact with a person willing to talk. Kalil proposed that IGplan restructure the final consolidation of the studies that had been carried out by another team at the request of Cnec Engenharia. The deadline was three days for the coordinator to reconsider the consolidation and restructure the Cnec changes, seeking a middle ground in accordance with Grando's own

understanding. The document would then be forwarded by Kalil to the environmental agency in Curitiba, the Instituto Ambiental do Paraná (IAP).

The fact is that even if the Cnec went back on its decisions presented at the meeting in São Paulo, it would be difficult in three days to restructure a document with 800 pages, with so many modifications and quite different from the original studies, which proved that Mauá was not very viable. Kalil's request for the biologist to do something that was, at the very least, reasonable for the Cnec was refused. The IGplan coordinator stated that the changes made by the Cnec were so many that it would be difficult to be reasonable. According to Grando, Kalil said *"Here's the pile of studies, Tom. We're going to deliver them today, I just want to tell you the following: we're going to make lemonade out of lemons. We'll probably have around two or three million to carry out environmental impact monitoring, inherent to the enterprise, and you could be our coordinator, an important person in conducting these studies and in the competent allocation of these resources."*

In response, the IGplan coordinator recommended: Kalil, unfortunately I have already participated in several studies and projects that are carried out after the construction of large dams. And after the construction of the dams, what is a commitment becomes a promise, and what is a promise becomes negligence. I do not intend to interact with this project at this stage, regardless of the amount of resources available. The meeting ended amicably, however, with sharp differences of opinion. Tom Grando defended compliance with the laws. The Cnec sought the approval of a profitable business, and more specifically: the

Preliminary License issued by the Environmental Institute of Paraná as soon as possible so that Mauá could be included in the Aneel auction scheduled for February 2005. After all, the company winning the auction should pass on the cost of preparing the studies. Cnec, the company that carried out the EIA/Rima preparation services, would pocket around R\$5,000,000.00.

During the meeting, Kalil Farran also made a very direct comment asking Grando not to express his concerns to the Public Prosecutor's Office (MP). The Cnec employee was aware that the Public Ministry was well informed about past events in the Jataizinho plant project and could be a future obstacle. As a reminder, the public civil action was carried out at the request of the National Association of People Affected by Dams (Anab). Changes to studies could easily be classified as illegal under the law. But the law is something that eventually falls below the powers of the electricity sector.

*“He said that knowing that Dr. Akiromoto, the MP's attorney, had been following this licensing process and other processes in Anab's own action, in a very critical way. Dr. Akiromoto was a scholar and was already emerging as an expert in the Londrina prosecutor's office, as a person who could intervene very effectively in the process. He asked me this, and I didn't even know Dr. Akiromoto. That was in October 2004”,*

commented Grando.

Environmental compensation would have a very high cost for the entrepreneur. Cnec Engenharia, as a subsidiary of Camargo Correia, accustomed to negotiations around mega-infrastructure constructions, saw the environmental relevance of the project's area of influence as a serious obstacle in the licensing process. The original reports highlighted the importance of the region's extensive forests, indigenous communities and the presence of family farming. These elements and alternatives to minimize the countless environmental impacts were replaced by texts without any scientific basis. The objective of the Cnec team was to mitigate the lack of environmental impacts. The report became a jumble of parts, a work that would impress Mary Shelley, the creator of Frankenstein. This was the draconian plan conceived by the prodigious minds at Cnec, the plant would not be blocked. So Kalil filed with the Environmental Institute of Paraná on December 3, 2004, Igplan's EIA with the corruptions carried out internally at Cnec.

A irresponsabilidade sem precedentes da empresa da Camargo Correia gerou, um ano mais tarde, a intervenção do Ministério Público através de uma Ação Civil Pública. Essa ação, que também inclui na lista de réus o Ibama, a Aneel e a APE, impediu por duas vezes que o projeto de Mauá fosse a leilão pela Aneel, uma no mês de fevereiro e outra em dezembro de em 2005.

# Tibagi - the river of rapids, 2004

The Tibagi River has a steep drop in level of 762 meters to the area of the alleged dam in Ortigueira. The difference in altitude is quite pronounced, giving great hydromechanical energy to its waters. In winter, when the water level drops, Tibagi shows its bed studded with rocks and huge boulders, giving the water layer a beautiful and naturally chaotic appearance. Rock formations cross the riverbed, forming extensive diabase dikes that millions of years ago were carved by the waters and transformed the riverbed into turbulent rapids and waterfalls like Salto Mauá itself, 30 meters high. The geomorphological characteristics give Tibagi an exceptional water oxygenation capacity. If it weren't for this purifying characteristic, the accumulation of pollution upstream, mainly due to the Klabin Pulp and Paper industry, in Telêmaco Borba, would make the waters of the Tibagi a true cauldron of pollutants. With the construction of a reservoir in this region, oxygen levels in the water of the lake formed would be very low – this is a valid rule for any artificial lake.

The portion downstream, or after the dam, receives the water trapped in the reservoir, after it passes through the turbines or escapes through the spillway, and consequently will also have water with qualities similar to that of the reservoir for several kilometers downstream, that is, with little oxygen and chemical and biological conditions different from those natural in the river, such as the production of methane and other gases in addition to the proliferation of certain algae and bacteria. Another dramatic consequence for aquatic life would be the change in the river's flood and drought regimes.

# Dourados AND pintados

The freshwater fish fauna has declined precipitously across the country. The most dramatic damages caused to rivers and which directly interfere with fish fauna are the deforestation of riparian forests, siltation, the runoff of pesticides from plantations, sewage, industrial effluents and predatory fishing. In the very critical scenario in which the waters of Brazilian rivers flow, large dam projects take on large negative dimensions in the extinction of fish (ichthyofauna), since they worsen the effects of the various aggressions mentioned. Brazil is the country of rivers, no other place in the world has river uniformity on its surface like ours. Once again, abundance encourages wasteful use, instead of awakening concern and conserving what is precious. Tibagi is a pearl, a river that survives human impacts and manages to maintain unique environmental qualities among rivers in the South and Southeast. It belongs to the hydrographic complex of one of the richest basins on the planet, the Paraná basin, whose fish biodiversity is 83 species, higher than the 49 species in the Atlantic Forest.

Abundance is still one of its virtues even with its potential plundered during the last century with an extensive list of endangered species. Fish that are currently rare in rivers such as the Iguaçu and Paraná – which have most of their rapids submerged by dams – still live in the preserved areas of the Tibagi River.

The meticulous study of ichthyofauna had the participation of renowned names such as the doctor in fish ecology, professor Oscar Shibatta, master Gislaïne Cova Grando, both from the University of Londrina, as well as Veterinary Doctor Domingo Fernandez, doctor in fish migration from the Federal University from Paraná, in addition to Grando himself, ichthyologist and coordinator responsible for the final texts.

Among the conclusions of the work of Grando and his team, it was confirmed that fish such as the dorado and the pintail - both present on the list of endangered species - would become extinct in the region planned for the Mauá plant. The Cnec texts, however, indicated that both are species with wide distribution in Brazilian rivers and omitted the threat of local extinction. The clear objective of the Cnec technicians was to devalue these rare species of fish. Of the 17 impacts listed by the ichthyofauna (fish) specialist, only 3 were maintained by the Cnec report. Conclusions about the ecology of migratory fish were completely suppressed in the final document delivered to Iap.

The most serious impact with the construction of the dam refers to the interruption of the life cycle of migratory fish. In Brazil, there are many species of freshwater fish with migratory ecological habits, some of which even cross continental distances. The piramutaba, in the Amazon River, for example, migrates for around five months from the mouth to the border region between Brazil and Peru, covering a distance of more than 3,000 kilometers to finally spawn.

The ecological details of Brazilian freshwater fish migrations still remain mysteries due to the complex water network and biological diversity present in the country. The movement of adult individuals between a feeding point and a breeding point is considered the most common type of river migration. Some species have more complex migrations because they include a third location, that of refuge. Migration is called reproductive when it occurs towards the breeding site. Food, or trophic, migration is that which occurs towards the feeding site. The direction of migration can also vary: downstream (downriver) or upstream (upstream). In Brazilian rivers, piracema is the most common migration, that is, the movement of fish upstream for reproduction. The ecology of rivers and the balance of the fish fauna of large migrators, which are also predators of smaller species, have undeniable relevance in the scientific world.

Another factor to be considered is the historical importance of piracema fish in the food and economy of riverside populations, since the majority of valuable fish for fishing are migratory fish such as surubim, dorado, curimba, pacu, jaú, piramutaba, among many others. Another relevant aspect deals with the contribution that fishing tourism, as long as it complies with certain reproductive

parameters of fish populations, can provide for riverside communities and for the preservation of aquatic environments by the population itself, as occurs in many locations in the Pantanal. Despite all this importance, the migration of Brazilian piracema fish is not treated with due seriousness by infrastructure expansion programs such as the construction of bridges, highways, ports and dams.

The construction of dams along the great Brazilian rivers as a staircase, or the policy of Optimal Use of hydromechanical potential, has been lethal for the ichthyofauna. There are eight dams in Tiete, four in Paraná, five in Iguaçu, twelve in Rio Grande, ten in Paranapanema and four in Paranaíba, all large rivers in the Paraná basin whose water has been used for hundreds of years. The dramatic decrease, or extinction, of noble fish populations in small and large rivers is proven by scientific studies, a situation that riverside populations and fishermen accurately report.

On the Iguaçu River, for example, the five reservoirs blocked the movement of millions of individuals who made the long journey upriver to spawn, an ecological ritual that dates back hundreds of thousands of years. A concrete wall erected in a few years is such a sudden interruption to nature that for countless species any type of readaptation to new environmental conditions is practically unfeasible. In recent research carried out by Paulo Buckup from the National Museum of the Federal University of Rio de Janeiro with the collaboration of the USP Zoology Museum, the NGO Conservation International, among others, concluded that 78% of the Paraná basin is in a critical state due to suppression,

riparian forests and the excessive number of hydroelectric plants.

Ichthyologist Buckup and his colleagues state that although Brazil is the country with the greatest diversity of fish in the world, with 2,600 identified species, 819 are at imminent risk of extinction. In other words, 1/3 of all Brazilian fish fauna is at risk of disappearing forever, a frightening prediction. The model of optimal use of water potential as understood by the electricity sector has proven to be incompatible with the conservation of rivers and environmental services. According to Ávila: *“The main Brazilian rivers have been transformed into a succession of reservoirs, causing flooding of large areas and changes in the water regime and breeding areas for aquatic fauna, in addition to becoming insurmountable barriers for fish.”*

To compensate for the likely impacts on fish fauna, the Igplan study had suggested a list of 17 recommendations so that the damage from a possible plant in Tibagi could be

minimized, including the construction of stairs and fish elevators. The fish ladder is an artificial channel, as if it were a stream, that connects the lower part of the dam to the reservoir, whose structure includes a sequence of tanks that form rapids capable of encouraging the rise of schools. This solution has been applied to numerous hydroelectric plants to allow fish to ascend to the lake and continue their migratory cycle. The largest canal – fish ladder – built in the country is that of the Itaipu plant, with a length of 10 kilometers and a difference in level of 120 meters. Under these conditions, most fish species have no difficulty climbing.

Godoy explains that “The cost of a Fish Farming Station is greater than the cost of a fish passage. A Fish Farming Station still has the ongoing cost of its maintenance... Therefore, considering today's costs, a fish ladder can be cheaper and more economical than a fish farming station, around 3.5 times less ”.

In 2003, on the Tibagi expedition, I had the opportunity to visit the only small hydroelectric plant on the Tibagi river, built in the 50s. There I witnessed hundreds of fish trapped below the wall struggling in the concrete structure of the dam until their scales were removed. ripped out and their external organs torn apart. Even so, the poor animals only gave up in the face of death. These fish were simply seeking to ascend the rapids that no longer exist. It's a very dramatic and moving moment.

During the construction of Canoas I and Canoas II by the Cesp/CBA consortium on the Paranapanema river, in São Paulo, the closure of the dams was suspended, ordered by Judge Dr. Fernando

David Fonseca, so that the fish ladder could be built in order to mitigate the frightening slaughter. of ichthyofauna (fish fauna), which in the judge's words "causes chills". The EIA/Rima did not provide for any reasonable compensation. Cesp's argument is that fry would be released at a certain point. In reality, a justification for reducing costs. According to lawyer Adyr Ferreira:

*Some states, including São Paulo and Minas Gerais, pressured by local initiatives concerned with fish preservation, approved specific legislation requiring dams in water courses to have a Fish Transposition System - STPs. Due to the immaturity related to the subject, these laws need to be improved, making them comprehensive and without legal or technical mitigating factors.*

Unfortunately, the fish ladder, a type of Fish Transposition System (STP), which many entrepreneurs were reluctant to build for budgetary reasons and many scientists and environmentalists insisted on adopting, was reviewed by Brazilian researchers regarding its real efficiency. STP technologies were imported from the United States, just as they were designed in the northern hemisphere. The concern was born there since the 1960s with the decline of salmon populations. In the United States, dozens of associations promote fish conservation projects. Save Our Wild Salmon is fighting to deactivate four dams on the Snake River in hopes of saving the salmon. In the salmon life cycle, adult individuals migrate from the sea to downstream

(upriver) where fertilization occurs. After spawning, salmon die by the thousands in shallow waters, serving as food for a multitude of predatory mammals, including bears, which feed themselves to survive the harsh winters of the temperate climate.

The eggs hatch and the fry remain downstream feeding until they reach young age, when they begin their journey towards the mouth of the river, and finally to the sea.

The STPs model has partially worked for salmon, however, recent work by doctors in ecology Ângelo M. Agostinho and Fernando Mayer Pelicice has proven that instead of mitigating impacts, STPs are an ecological trap that can increase the chances of extinction in Brazilian rivers. Data included ladder surveys, fish reproduction, larvae and genetic studies. The biologists' work was published and cited in 2008 in the most renowned journals in the scientific world, including Conservation Biology and Nature. Research carried out in the Porto Primavera reservoirs, on the Paraná River, in the Paranapanema River complex and at the Lajeado plant, on the Tocantins River, proved that fish ladders, instead of mitigating, increase the environmental impact. Fish such as the golden *Salminus brasiliensis*,

the spotted *Pseudoplatystoma corruscans*, the piracanjuba *Brycon orbignyanus*, the pacu *Piaractus mesopotamicus* and the curimbatá *Prochilodus lineatus* complete their life cycle by migrating up the river during the high-water season to spawn in tributaries. Unlike salmonids that spawn once in their lives, fish in Brazilian rivers spawn several times during their lives. Therefore, the migration of adult individuals downstream after spawning is essential to complete the reproductive cycle of these fish. In a natural environment, the eggs, while descending through the swirling waters, hatch and the fry develop.

Upon reaching the floodplain region, you enter canals and lagoons. In marginal environments, disconnected from the bed and outside the flood season, they find a safe environment to grow. During the next flood, they return to the rivers and join the schools of adults. Augustine states that “In the case of salmon, downward migration occurs when the fish is already 12 to 15 centimeters long. Therefore, when migrating downstream, young fish are able to pass through the reservoir and spillways. Among the great migrants in Brazil, the eggs descend passively,

for 70 or 80 kilometers, while they develop. When they find the reservoir, they drift and can be preyed upon by any lambari. At the top, they can even find tributaries of the river to spawn, but the larvae descend to the reservoir and find still, clear water, where they have difficulty escaping predators.” One of the main problems is that after the adult fish climb the transposition system, neither they nor the larvae descend back down the ladder, not completing the reproductive cycle. They end up confined to the stretch above the reservoir where the environment is unsuitable for reproduction, discouraged by the stagnant water in the dam. The problem, says Pelicice, is convincing authorities and companies of this: the law determines that you have to adopt mitigation measures, and people [companies] find it easier to build the stairs. According to ichthyologists, the ladder induces the fish to exchange a rich environment conducive to spawning, which is the region of tributaries and small rivers below the dam, with an environment of much lower quality, referring to the reservoir. Pelicice warns that:

*They are implemented without a clear objective, simply because there is a common sense that*

*believes in their usefulness. But only a few species end up using the stairs, not always the migratory ones. From a conservation point of view, ladders are ineffective.*

Another more efficient suggestion proposed by Mauá's report was the implementation of fish elevators. The complete process includes a mechanism that drags the fish - aggregated in the lower part of the dam wall - and pushes them to an elevator filled with water. Once suspended, the elevator transfers the water with the fish through a tube to a tank car that takes them to a defined point downstream where environmental conditions are more favorable.

And finally, another option is fish farming, reproducing migratory fish in tanks and transferring the larvae to strategic locations in the region under the influence of the dam, which can subject the entire basin, including. According to the publication Sociedade Brasileira para o Progresso da Ciência – Sbpc, in 2008 scientists from several countries gathered for the first time data on the effectiveness of ladders in several dams in South America.

The result was published in a special edition of the journal Neotropical Ichthyology. They are unanimous in recommending parsimony in adopting the mechanism. Other strategies such as elevators and fish farming also require investigation and should be considered. The Cnec report omitted not only the extensive scientific basis presented in the original studies, but also modified numerous scientific citations such as that of the researcher Agostinho himself: Original: “Reservoirs notably alter the relationship between marginal terrestrial areas and the water surface... (Agostinho, 1992).”

Quote modified by Cnec: *“The formation of the reservoir will also cause a change in the relationship between marginal terrestrial areas and the water surface... (Agostinho, 1992).”* Possible mass extinctions of migratory fish is one of several confirmations of the enormous responsibilities attributed to hydroelectric projects. In this sense, experts were left with no doubt that the Cnec report was irresponsible, omitted and criminal.

**Impactos sobre a fauna de peixes**

As medidas mitigadoras e compensatórias, bem como as ponderações sobre a eficiência das medidas corriqueiramente adotadas pelo setor elétrico, foram totalmente suprimidas no documento forjado pela CNEC. Desta maneira o documento depositado no IAP descumpre uma determinação básica da norma que estabelece o conteúdo mínimo a ser abordado pelos estudos de impacto ambiental.

- *Redução de espécies herbívoras pela retirada de vegetação na área a ser inundada;*
- *Exposição do solo na área do canteiro de obras;*
- *Por detonações nas áreas de empréstimo e na região do desvio;*
- *Pesca clandestina por funcionários do empreendimento;*
- *Obstrução do fluxo de peixes pela instalação do desvio do rio e instalação de ensecadeiras;*
- *Instabilidade e Ambientes Aquáticos pela oscilação do nível do rio abaixo da barragem;*
- *Oscilações dos parâmetros físico-químicos da água;*
- *Confinamento de peixes nas turbinas durante as operações de manutenção;*
- *Obstrução da migração de peixes ao longo do rio Tibagi;*
- *Submersão de ambientes de corredeira a montante da barragem;*
- *Aumento da pressão, estratificação térmica e escassez de luz no fundo do reservatório;*
- *Decomposição da matéria orgânica submergida pelo enchimento do reservatório;*
- *Oscilação do nível do reservatório com impacto nas comunidades adjacentes;*
- *Desorientação de cardumes e capturas em massa por pescadores “oportunistas”;*
- *Modificação da relação entre áreas aquáticas e de vegetação;*
- *Competição por áreas não atingidas do reservatório.*

# The Sussuarana Refuge

Paraná is currently a state with few refuges for wildlife. Many state reserves do not support the subsistence of carnivorous mammals such as the cougar or even large grazing species such as deer. The survey of mammal fauna in the Mauá study recorded a varied diversity of large species such as peccary, tamanduas, deer and a record of cougars. There, on the banks of the Tibagi, is one of the last refuges of these species in Paraná. Medium and large mammals are rare or extinct in most of the state. The last jaguar seen in Campos Gerais, the birthplace of Tibagi, was cornered and killed by farmers in 1989. Ecologically viable populations of large mammals such as the cougar are distributed precisely throughout the Tibagi basin, especially in the reserves that cover Telêmaco Borba and Ortigueira, a site designed for Mauá. These relevant data were recorded by researchers in the area of direct influence demarcated for Mauá.

The banks of Tibagi are one of the last refuges for the mammal fauna in Paraná. For the researchers, the relevance of the forest in this region of Tibagi in the conservation of the last mammal populations in Paraná became obvious. Species such as the tapir, deer, wild pig, capybara, deer, howler monkey, cougar and jaguar are at risk of joining the mammoths, an animal that became extinct due to hunting by prehistoric man and which no longer displays its footprints in nature but only in museums and documentaries.

# Maria-leque AND Arapongas

Marcos Bornschein, who was also part of the first legal challenges to the events of 1996, is one of the most competent and correct biologists I know. Bornschein is a perfectionist and dedicated scholar. His data is accurate and comprehensive. Anyone who has the opportunity to follow Bornschein on fieldwork is impressed by his in-depth knowledge of the various branches of biology. His specialty is birds, but Bornschein dominates other segments of zoology such as reptiles and amphibians.

His knowledge of botany and ecology also helps make the ornithologist one of the most complete biologists I know. In the Mauá studies, Bornschein's fieldwork lasted 24 days and resulted in a significant amount of data to be processed within the tight deadline established by the Cnec. In this way, it was possible to deliver only the diagnosis, pending the assessment of impacts and mitigating measures. Even so, the researcher's studies were not used by the Cnec, having only attached a few data collected by the ornithologist. Marcos Bornschein had carried out a survey of more than 90 sources of information about the birds of the Tibagi basin.

The complexity of its work was summarized in just 10 bibliographic sources, the Cnec omitted almost 90% of the research sources. In the studies, the ornithologist identified five species threatened with extinction, while the Cnec maintained only one, the purple-breasted parrot. Currently, one more species can be added to the list,

according to the new edition of the world list of threatened bird species: the chigger. The others are the red-fronted jandaia, ocellated nightjar, cigar, fantail and milky-tailed mare. The diagnosis carried out by Bornschein included a survey of all species existing in the basin, with their respective recording locations and sources of information. He also surveyed all species in the area of direct influence. The ornithologist recorded bird species restricted to riparian and alluvial environments subject to periodic flooding from Tibagi. These alluvial environments are delicate ecosystems where very peculiar vegetation develops.

There, the countless species of birds that find refuge and food would suffer local extinction, since with the construction of the dam the natural environment could no longer be reconstituted, even with reforestation on the lake shore. This situation is explained by the change in flood cycles and consequent deposition of sediments, characteristic of the formation of this type of soil and vegetation. And like the igapó forest in the Amazon, it and the entire profusion of life that establishes itself there depends directly on the presence of water.

Records of ornithofauna (bird fauna) in the Tibagi basin account for 435 species of birds. In the flooding area, the Bornschein inventory contains a huge number of 247 species. To get an idea of this number, ask yourself how many species of birds you know. The ornithologist himself identified 10% of the species, the literature cited 90% of the species in the Bornschein inventory. Mathematical biostatistics methods prove that because studies in that specific area are still insufficient, a richness of 350 species can be estimated for the region. The record of the ocellated nightjar, for example, was the subject of questioning at the Public Hearing of Telêmaco Borba, it was found by the deponent with auditory records documented through a recording present in the report presented by Igplan, however absent in the final report handled by Cnec.

The report finalized by Cnec and presented at the public hearing proved to be extremely poor. Igplan consultants were perplexed by the mediocrity of the document, which ultimately reduced the three weeks that

Bornschein spent researching in the field to three days. The fate of the birds that inhabit the area planned for the reservoir is as dramatic as that of the fish. Birds have the possibility of flying to other regions and saving their lives, at least for a generation. The problem is that they would migrate to the forests on the banks of the reservoir, which are already territorially occupied by other birds. This would mean, sooner or later, a sad end for one of the two populations.

The impact on the bird population would be less visible to the people of the region, since fish have a great influence on the riverside economy, and birds do not. But in biological terms, this damage would be extremely worrying and irreversible.

# The Last Forest

Fauna studies – which included mammals, birds and fish – were not the only ones to have their content changed. The Cnec would also make compromising suppressions in the work of botanist Alexandre Uhlmann, responsible for studying vegetation. The researcher highlighted in his report the relevance of the dense and leafy forest that would be condemned by the filling of the reservoir. This would be the most severe negative impact presented in detail in the botanist's texts. The researcher's opinion indicated the existence of an ancient forest on more than 1,500 hectares on the right bank of the river. There, the forest has primitive characteristics, representing the last genetically viable remnant of the transition between Mixed Ombrophylous Forest (Forest with Araucaria) and Semideciduous Seasonal Forest (Forest with Perobas of the Paraná Basin) in the Tibagi basin. The meeting of two different types of vegetation, called an ecotone, presents species typical of both ecosystems. This condition further increases the genetic value of that region. Uhlmann identified five aggravating conditions, all of which were removed by Cnec Engenharia. These data that make up the essence of the botanist's study were, as absurd as it may seem, omitted in the EIA document delivered by Cnec to the environmental agency.

The suppression of the forest is the most critical impact, which makes the technical intervention by the Cnec team quite reprehensible. Other suppressed texts explained the importance of vegetation on the right bank of the river, an area of direct influence of the Mauá plant. There is the most valuable and diverse native forest in the entire Tibagi basin. Although forest formations are established there in varying stages of conservation, it is a floristic composition with great diversity and well-developed forests, especially if the current scenario of degradation in many parts of the Tibagi basin is considered. According to professor Oscar Shibatta from the University of Londrina:

*To give you an idea, its [Tibagi] native forest cover was reduced by approximately 96%, with few preserved remnants remaining. Deforestation, inadequate soil management, and the discharge of urban sewage and industrial waste have caused and continue to cause undesirable effects on water, harming the population and the environment itself. Flooding, silting of rivers and streams, decreased productivity of ecosystems, changes in rainfall patterns and climate change are consequences of inadequate human intervention in the environment.*

Research at the University of Londrina revealed the importance of this Tibagi region. Alexandre knew that eliminating vegetation would also affect the connection between conserved forests throughout the river basin.

These forests that function as biodiversity corridors are extremely important in the balance of fauna and flora populations, enabling the gene flow of species, data that was omitted in the Cnec EIA. The World Bank itself had reached an agreement with the state of Paraná through the Paraná Biodiversity program to develop conservation projects for important forest remnants. Therefore, such data was known to state bodies and even served as the basis for the contribution of international capital to be allocated to the conservation of these same forests. Given the rare density, the vegetation even houses species that were recently unknown to science. Ana Odete Vieira Dias, a few years ago published work that contained the description of species related to four genera unknown to science found in the middle and upper Tibagi region. In this way, Cnec wove a patchwork that progressively distanced itself from the original studies. All other forestry impacts listed in IGplan's final report were mitigated by Cnec Engenharia technicians. The data was generic and did not present the specificities of the Tibagi River. Riparian forests exert a strong influence on aquatic organisms, whether providing thermal comfort through shade, or transferring organic matter such as fruits that serve as food for both fish and microorganisms. Leaves, twigs and fruits that settle at the bottom of the river provide the organic matter necessary for the benthic fauna, as aquatic invertebrates and microscopic organisms are known.

Riparian forests are the basis of the river's diet. The intimate relationship between these two environments imposes delicate ecological conditions, the price to be paid is high if the alliance

between the riparian forest and the river is interrupted. The biggest threat to vegetation upstream and downstream of Tibagi is the change in the water regime. The water that would naturally flow down the river during the dry season, for example, tends to be stored in the reservoir to maintain average hydroelectric production, which could make dry periods more dramatic for the river with flows well below the standard.

In addition to this compromise, there is also a sudden change in the physical-chemical conditions of the water, such as pH levels, due to the volume of water that becomes stagnant in the reservoir. Over time, this type of direct impact becomes visible with the impoverishment of riparian forests that depend on water quality in their most intimate biological processes. In the reservoir, the riparian forest is completely suppressed, it is flooded, on the banks of the lake there is now another type of vegetation that has no natural ecological relationship with the lake, making it impossible for the profusion of fish and invertebrate fauna. Added to this new artificial system is the low level of oxygen and high levels of gases such as methane, typical of dammed waters.

The areas of direct influence on living beings would spread for tens of kilometers in Tibagi, downstream and upstream. The Cnec preferred to state that such interference will not exceed the mouth of the Antas stream, just a few kilometers below the dam, but no justification in this regard was presented, not even the indirect impacts on the riparian vegetation downstream. The native forests, almost extinct in Paran , also serve another noble purpose: they are home to the Kaingang, once-powerful indigenous people, who have known these lands long before the invention of dams.

# The Kaingang People

The Kaingangs people occupied an extensive region of the country that went beyond southern Brazil, including what is now Rio Grande do Sul, Santa Catarina and Paraná. In five centuries the white man invaded and occupied the limits of indigenous territory. Today, little remains of the culture and genetics of this once-powerful nation. These people, who insisted on living, conquered with great difficulty a set of indigenous reserves distributed in the three southern states where they would be safe from extinction. Five of them are located in the Tibagi basin. The Mococa reserve, in the municipality of Ortigueira, borders the area destined for flooding by the Mauá dam. Right in the heart of Tibagi, in the area of direct influence of the Mauá plant, it is home to a small contingent of four hundred kaingang. Because of indigenous lands, anthropologist Maria Fernanda Campelo was hired to draw a profile on how the possible interferences that a drowned forest, a polluted lake and extinct fish would affect the population of Mococa.

Long after Campelo began such investigations, and after Francisco Lange, director of Igplan, sent the studies to São Paulo, Marco Antonio Villarinho, head of the environment department at Cnec Engenharia, contacted the anthropologist by phone, that was there by October 2005. He asked Campelo to sign a document of approximately three pages, a summary of anthropological studies.

Villarinho hid his true intention, and said that the document was a requirement from the environmental agency. His purpose was to hook the researcher and have in hand a type of compiled and generous opinion from a technical point of view, which would later be attached to the Cnec paperwork as the official sociological document. This summary would then be filed with the Paraná Environmental Institute to replace the dedicated work that the anthropologist had carried out. Campelo preferred to act politely, instead of saying "*you are trying to deceive me*", and drew Vilarinho's attention by stating that it was essential to present the study in full to the environmental agency and that the complexity of Kaingang society and the possible impacts highlighted in the studies did not could be summarized in three pages. Villarinho clearly wanted to remove the Kaingangs from attention, leaving them forgotten as they always were, in the darkness of the forest. Contrary to anonymity, Campelo brought this indigenous group to light, so the evidence presented in the anthropologist's studies would require the involvement of Ibama, Funai and the National Congress, which would make it very difficult,

or delay, the release of the Preliminary License.

Shortly before the public hearing in Ortigueira, another Cnec employee, Ms. Penélope, sought to intercede again, insisting that the anthropologist change the distance between the dam and the indigenous area, the researcher again disagreed. Penélope hit another key, she wanted the distance of 20.5 kilometers between the indigenous land of Mococa and the Mauá reservoir printed on the document, and the signature of technician Maria Fernanda Campelo was once again essential. Campelo used maps to check the exact dimensions and confirmed that the correct distance in a straight line was 4.6 kilometers, very different from that requested by Penélope. And in fact there was a distance of 20.5 kilometers, but this was by road, which doesn't make any sense within scientific parameters. The Cnec, without the signature of the researcher, simply preferred to omit the project's direct relationship with the Mococa indigenous tribe and remove the anthropological report from the final report. ([Documento 14](#)).

Campelo's studies confirmed that even though the reserve is located outside the area planned for the plant's lake. However, it is

a region for fishing and collecting water for consumption, that is, the population is directly dependent on Tibagi in the area predicted to be flooded. With the Mauá plant, both fishing and water consumption would be compromised. With the flooding of forests close to Tibagi, populations of fruit species such as the jerivá palm would be compromised, fish would be a scarce source, and the noblest of them would become extinct as the seasons passed.

The water from the reservoir would promote the proliferation of disease vectors as well as compromising the quality of the Tibagi water used by the Kaingangs. These are some of the relevant damages to the population of Mococa raised in the anthropologist's studies. Another impact that will be dramatic over the years is the increase in hunting due to the decrease in the supply of fish. This type of pressure will certainly compromise populations that are already quite depleted, such as armadillos, caviés, tapirs, deer and capybaras. There is no doubt that the indirect pressures on the fauna of this mega-biodiversity area in Paraná will be quite negative. According to the Cnec study, the inhabitants of the indigenous village of Mococa would not have their activities and livelihoods directly affected by the hydroelectric plant. Potential damages such as erosion and water pollution are also not considered.

For all the reasons already mentioned, the area of indirect influence established in the IGplan studies was 200 kilometers downstream, including the entire Municipality of Ortigueira and Curiúva. According to the understanding of the community of technicians in the area of environmental studies of hydroelectric plants, the entire geopolitical unit of the affected municipalities is considered an area of indirect influence due to existing socio-environmental relations, even if the reservoir's catchment basin does not fully include the aforementioned municipalities. Given this perception, it became quite plausible for IGplan technicians that the Mococa reserve was within the area of direct influence.

The fact is that the Cnec disregarded the details and relevance of the study carried out by IGplan and determined an insignificant 2.5 kilometers as an area of indirect influence, even leaving out the entire Municipality of Ortigueira and Curiúva and completely excluding the Kaingangs reserve.

There is a consensus in the scientific community that has worked for three decades in the region, such as anthropologist

Doctor Kimiye Tommasino from USP and professor Oscar Shibatta, from the University of Londrina, that the indigenous tribes of Queimadas and Mococa in the municipality of Ortigueira are within the limits from the plant's direct influence area, contrary to what the Cnec report states.

# Ismair, the peasant beekeeper

Social scientist Carlos B. Vainer, transcribing excerpts from a report by the World Commission on Dams (CMB), emphasizes that:

Communities downstream of the dam, in the tropics and subtropics, face some of the most drastic impacts of large dams, particularly in areas where change in the hydrological regime of rivers negatively affects the ebb lands that support local ways of life through agriculture, fishing and the harvesting of forest products.

*"(...) the flooding of land and the alteration of the river ecosystem – whether downstream or upstream of the dam – also affects the resources available in these areas – as well as productive activities. In the case of communities dependent on land and natural resources, this often results in the loss of access to traditional ways of life, including agriculture, fishing, livestock, and plant extraction, to name a few. This not only causes disruptions in the local economy but also effectively displaces populations – in a broader sense – from access to natural and environmental resources essential to their way of life. This form of displacement deprives people of their means of production and displaces them from their ways of life..."*

The peasant has never heard of Vainer, much less knows that he himself is a supporting player in the sociologist's report, along with many other riverside dwellers. Ismair's work begins in the early hours of the morning, like all work worthy of a country man. Checking the bee boxes, maintenance services and harvesting honey are some of the activities of the Carvalho da Silva family. In an area of 20 bushels, 320 bee boxes are installed on the banks of the Tibagi, in Vila Salinho do Alemão, district of Lajeado Bonito, municipality of Ortigueira.

The Carvalhos' beekeeping activity yields 10 tons of high-quality, organic-certified honey. After being processed and packaged, the product goes directly abroad. This is the healthy economic activity of Ismair Carvalho da Silva, the beekeeper. It was right there, on the banks of Tibagi, where he was born, grew up and learned the different ways of producing in harmony with nature. Honey from wild and African *Apis mellifera* bees is the source of income for the family of the beekeeper and his sister, owners of the beekeeping business. There, the farmer also produces a range of foods that make his family practically independent, except for salt and flour. He is proud to report the varied menu that includes cassava, rice, beans, corn, lettuce, onion, cabbage, zucchini, other vegetables, orange, lemon, papaya, guava, blackberry, avocado, jabuticaba, sugarcane, milk and its by-products such as yogurt. He also raises chicken for his own consumption. To finish, Ismair gives a healthy recipe that he consumes in the mornings, Tahitian lemon juice with fruit salad, and adds: it's all organic!

With four children attending school, the beekeeper is happy to say that they help with production, but that they are free to decide their daily activities, and emphasizes that he wants them to have laser skills, as Ismair's childhood was forged with hard work, common for the colonists who prospered in a dignified way. When I asked Ismair about his relationship with Tibagi, he spontaneously referred to the laser that he gave him as a child and now for his children, and then spoke about the animals that inhabit the forests in the region and which have never been molested on his property. or hunted. It is not difficult to understand the factors that led Ismair to succeed in running an environmentally friendly business and building a happy family. However, the peaceful, dignified and happy life would receive an unexpected visit from the messengers of the Growth Acceleration Program to haunt the nights and finally, after five years, take away what Ismair and his wife Rosilda achieved after three generations of honest and sustainable work. This is the recipe for how the current developmental model produces profit and destroys opportunities. Ismair says that:

*“With the dam I will lose all my property, 100%. The value they are negotiating is lower than the real value. With the money I won't find*

*anything like that for organic production. There are few areas in Paraná with forests, rivers and that do not have soy within a radius of a few kilometers [which makes organic production unfeasible due to pesticides]. From the beginning I was against the dam and I still am against it. These men only think about money, they don't think about the future or the next generations."*

Ismair realized the real consequences of a dam in that region, unlike a large part of the population, who innocently surrender to the promises of entrepreneurs. An exception among riverside dwellers, the beekeeper has taken the lead in the fight for the river, for his property and for its history. Ismair made numerous contributions to compose the League's technical arguments, mainly regarding possible contaminants existing in the region – which was later proven.

# the plant influencing area

Another pearl cultivated by Cnec was an inaccuracy in the flooding quotas and a predetermination of the plant's areas of influence even before impact studies were carried out. While in repeated discussions, Igplan asked for the identification of the area of influence, the Cnec postponed such demands. Complaints from technicians also came up against the lack of definition of the location of the bus axis and the construction site.

According to agronomist Francisco Lange, director of Igplan, the demarcation of the area of influence is different for the physical (soil, air, water), biotic (fauna and flora) and socioeconomic (populations) environment. Each has its own dimensions in space and time. Lange emphasizes that *“... the definition of the area of influence as was done, at the beginning of the work, without prior knowledge of the impacts, constitutes an inversion that leads to the compromise of the final result, since it is exactly the knowledge of the impacts that allows the definition of the area of influence; that the initial definition of an area of influence serves only as a guide for the beginning of work, and must be confirmed after the studies carried out”*.

The EIA results are the final markers that confirm the areas of direct and indirect influence. This information determines, for example, the extent of social and environmental programs, that is, which programs will be developed and which municipalities surrounding the dam will benefit from socio-environmental compensation projects. The definition of the area of influence also determines which environmental bodies are responsible for licensing. It also identifies the ecosystems and human populations impacted, the locations for holding public hearings, as well as possible public bodies to be consulted during the process.

Anthropologist Maria Fernanda Campelo, for example, had

confirmation of the exact location of the dam just three weeks before the public hearings. Campelo had therefore handed over to Igplan the study with the likely impacts depending on the exact location of the dam. The Cnec reversed the scientific order by determining the areas of influence before the studies and delayed confirming the exact axis of the dam and the construction site until the public hearings.

# League Appointment

In April 2004, the Tibagi River Basin Committee appointed new members to the board, among them was the Environmental League, represented by Tom Grando and Rafael Filippin. Once again, the organization was ahead in monitoring Tibagi's usage policies. The committee would be another possibility for the League to raise its concerns at a very heterogeneous level of discussion. There were 40 representatives of the executive branch, water users and organized civil society present. User members included the Sanitation Company, the Agriculture Federation, State Department of Health, Funai and Copel, as well as representatives of the executive power of Londrina, Tibagi and Ponta Grossa and Iap, the Department of Agriculture and Supply and the Suserhsa.

In particular, Suserhsa was the first public authority to corrupt itself in the

interests of entrepreneurs([Documento 15](#)). Even though it was alerted by the League, director Ivo Heisler Jr. readily agreed with the Cnec. Suderhsa was sometimes questioned by the Public Ministry and the Environmental League.

Federal and state laws of 1997 and 1999 respectively gave broad powers to Basin Committees in the management of water resources. A new resolution in March 2004 further expanded the institution's powers. From then on, the committee had the legal prerogative to intercede and block projects that did not respect internal management plans, the Water Law and other legislation that prioritized water use. multiple of water resources.

Even though the participation of civil society was only 20% of the members, the League sought to interact and participate fully in the meetings, at the same time it perceived that some members had little commitment to the committee. The institution with decision-making powers did not have a unified thought and the meeting ritual was not always followed. In 2006, a motion voted on in the committee was sent to the Ministry of Mines and Energy, at the time chaired by Silas Rondeau, and to the National Electric Energy Agency so that Mauá could be removed from the auction scheduled for October of the same year and pending approval of the basin plan by the committee itself. The committee continued its protocol at a slow pace, the main objectives were not achieved during these years. The Environmental League became a regular participant in the basin committee, because it understood that it would have the administrative power to intervene positively in licensing, and if necessary, nip the problem in the bud.

However, the Basin Committee was yet another agency created by the government using public resources, doomed to submission and oblivion. But at that time the League invested great energy in this supposed administrative resource. The most active representatives of the Committee then persisted in a very active way seeking a responsible internal policy, this institution should be sovereign in managing the priorities of multiple use of Tibagi's water resources. But it didn't work here or in other parts of the country. The Committees, in practice, were not even known by the Electrical Sector. Decisions continued to come from the top down.

At that time, in July 2005, Folha de Londrina published another article warning about the losses that Mauá could cause:

*“A hydroelectric plant will bring a lot of benefit to us. The city will gain a lot from royalties and they will give us another environmental area”. Informal comment from an employee of Telêmaco Borba city hall, heard by the reporter inside the city's Environment Secretariat. If only it were that simple... But the environment is not a bargaining chip. A lost ecosystem is irreplaceable. If a portion of society - perhaps the largest - believes that the fruits of a great undertaking compensate for this loss, that opinion must be respected. It is inconceivable that this choice is made in the shadow of disinformation, as is observed today. Among researchers from different areas, there is a consensus that the construction of a hydroelectric plant would cause profound and irreversible damage to the Tibagi River”.*

The professor at the Department of Animal and Plant Biology at UEL, Francisco Striquer Soares, points out that the construction of a medium to large plant would destroy one of the main - and vital - qualities of the Tibagi River, which is its ability to self-recover. Being a rapids river, with 762 meters

of altitude variation between the source and the mouth, the waters of the Tibagi gain speed and, with this, a great capacity for purifying pollutants. Now imagine turning all of this into a big lake. There will be no way to recover this water, says Soares.

# The Socio-Environmental Setback

Since taking on the role of Minister of Mines and Energy, Dilma Rousseff has used extreme forces to put an end to the Lula government's PAC (Growth Acceleration Plan) infrastructure plans, including the Mauá project. To achieve her objectives, the minister makes use of the same authoritarian principles that she fought so hard as an opponent of the military regime in the 70s. Now, on the other side of the trench, the side of developmentalism, the former guerrilla advances inflexibly on the constitutional rights that validate social struggles and the multiple use of water resources.

*"The construction of the plants included in the Growth Acceleration Plan (PAC) aims to satisfy the desire for large works by the construction cartel, the biggest donors to Lula and Dilma's campaigns", quoted by Telma Monteiro, socio-environmental activist.*

The positive changes recommended by experts, the warnings about the responsible management of river basins did not trigger changes in the minister's perception.

Dilma had disagreements with scientists, researchers and energy experts such as Ildo Sauer himself and Sérgio Gabrielli (president of Petrobras). While she was minister, Dilma sought to continue the old concepts, considering only megawatts and disregarding the democratic use of water resources - achieved with the profound effort of citizens with a critical vision and political insertion since the 1980s.

Another disagreement for Dilma it was with Minister Marina Silva due to the negotiations surrounding the notice for the

concessions for the auction of the Santo Antônio and Jirau plants, on the Madeira River (RO). Dilma's economic argument and President Lula's interference spoke louder. Ibama (Brazilian Institute for the Environment and Renewable Resources), finally, granted a prior license for the hydroelectric plants to be built without impact studies and technical opinions being fully respected. This, among other facts, culminated in the departure of Minister Marina Silva from the Ministry of the Environment. In an article on the page, Minister Dilma commented: When I say ours, I mean the ability we have to overcome any challenge. The main one is to continue this, bringing more progress with development. Above all, social justice for Brazilians. In 2004, the New Model of the Brazilian Electrical Sector was implemented through Law 10,848 of March 15, 2004. According to scholars, the electrical sector maintained the same defects as in the 90s.

Despite institutional efforts - such as the creation of the Energy Research Company (EPE) in 2004 - government measures did not address the elements that would cause new crises in the sector in the following years.

# 2004 - Requião and Dilma Rousseff negotiate the Mauá plant

Paraná had stated during the 1997-2003 Lerner government that integrated studies of the Tibagi basin were essential before the execution of any hydroelectric plant. The integrated study is prepared through a broader investigation, including the entire hydrography of the river. Governor Requião gave a signal that seemed to follow the same direction, but in practice was very different. In the first week of his term, the governor suspended all licensing, including those for dams in the state of Paraná, a kind of moratorium. And this may have been the strategy to bargain with the federal government for possible impediments not only in Tibagi but also in the Iguaçu basin, as long

as there was probably some security of political support and that Copel, the state's energy company, would come to be the controller of this enterprise.

This is a plausible conjecture: a moment with a very harsh attitude of suspending this type of project, with the apparent intention of moralizing the performance of the electricity sector in Paraná, and another moment, after political negotiations, being as flexible as possible regarding the release of prior licenses. by the environmental agency of Paraná, the IAP. Since 2004, licenses have been released in absentia, with the strokes of political positions such as the directors of the Environmental Institute of Paraná.

Often disregarding the environmental body's own internal opinions. In the convergence of pro-Mauá plant forces, a more armored political level entered the scene, as expected. The efforts came from Brasília, since the work is the main project of the Growth Acceleration Program planned by the Federal Government for the South of Brazil. Then in March 2004, the newly elected governor

Roberto Requião had a meeting in a petit comité with the then Minister of Mines and Energy, Dilma Rousseff. At this meeting, which took place at the Government Palace in Curitiba, flexibility was negotiated by the state's environmental agency and other authorities, such as Suderhsa, in addition to the government of the state of Paraná itself in relation to new hydroelectric projects. Pressure from Minister Dilma made it clear to Requião that without Mauá there would be some type of restriction on the part of the federal government. The text extracted from the Requião website in 2009 would reveal the developmentalist thinking that justifies the political manipulations within the Environmental Institute.

*“Paraná is self-sufficient in electricity, but we continue to invest heavily in the sector. After completing the Santa Clara and Fundão plants, we started the Mauá plant. In 2009, we must invest R \$1.1 billion in the generation and transmission of our Copel. We want to increasingly increase the supply of energy, to receive and encourage the expansion of large industrial, commercial and service investments.”*

One of Cnec's several challenges was to push the illegal Eia/Rima through the cracks opened in the Environmental Institute of Paraná, and wait for the opinions of the environmental agency's technicians to be trampled on by political decisions made by the agency's board of directors, in order to further unblock the situation. agility in releasing the environmental license([Documento 16](#)).

This strategy depended on negotiations between Requião and Dilma, who thrived on ambitious agreements. At the end of 2004, Cnec delivered the final EIA/Rima document to Iap. It was already agreed that the director of the environmental institute, Rasca Rodrigues, would facilitate the approval of the document forged by the Cnec, even though internally the institution's technicians warned about the pile of flaws in the studies – 70 in total. After completing this stage, two public hearings still crossed the path of the Cnec, Governor Requião and Minister Dilma. In addition to the small administrative collaboration, Rasca would have to face the population, organized civil society and the public ministry, which had already been monitoring the tracks of the director of Iap and Camargo Correa's company, Cnec.

According to environmental law specialist Rafael Filippin, lawyer for the League, Eia/Rima could not even have been filed by the Environmental Institute of Paraná and taken forward in public hearings, due to the number of illegalities and the level of amateurism with which it was copied. These illicit negotiations were carried out without the slightest embarrassment between the

government and the environmental authority. Six months later, at the event in Ortigueira and in front of an audience of hundreds of citizens, Iap employee Noeme Moreira, Iap representative at the hearing, spoke to the population with the words: this is a political decision - as stated in the video files of the League.

Water use legislation in Brazil is quite democratic and requires the participation and consent of the population, representatives of society, the Basin Committee, opinions from state environmental bodies among other authorities, and depending on the situation, as in Mauá, the presence of federal bodies such as Ibama and Funai, in addition to authorization from the Legislative Assembly – in the case of Paraná. The public manifestation of an illegal act openly pronounced by a representative of the environmental agency Iap is quite worrying. Even with a statement from the public ministry and complaints from representatives of civil society, Governor Requião decided on his own to move forward with the Mauá project, disobeying everything and all legal protocols. The Iap director had fulfilled his part of the bargain, but along the

way he still had to clear Funai (National Indian Foundation) and Ibama - the authority legitimately responsible for licensing Mauá.

The dimensions of environmental impacts in fact required another level of decision by law. The competent body to evaluate Mauá, according to researchers from the University of Londrina, should be the Brazilian Institute of Environment and Water Resources (Ibama) and not the state environmental body, Iap. This inversion of state and federal bodies was questioned in some of the actions filed by the Public Ministry. For the release of the Mauá plant to be successful, a meeting between the Governor of the State of Paraná and Minister Dilma resulted in an ordinance, which was duly arranged by Rasca and a second person within the environmental institute who was responsible for the bureaucratic details, it was Harry Telles, arrested for a crime in 2009.

The legal loophole opened by the governor's minions established an exceptional regime for infrastructure projects. In other words, there would no longer be a requirement for Strategic Environmental Assessment and Economic-Ecological Zoning, a

type of more rigorous and broad assessment for large projects like Mauá. The edition of Ordinance Iap No. 070, on April 14, 2005, establishes, under an exception regime, requirements previously established by Ordinance 120/2004/Iap/GP ([Documento 17](#)).

When the authoritarian government finds itself cornered by the laws, then it changes the laws. Once the rigorous and serious restrictions of the state constitution were removed, not only Mauá but a series of other hydroelectric projects in Paraná obtained licenses, without the necessary care and attention that the licensing of works of this magnitude require. One example was the recent license granted to the Baixo Iguaçu plant, a mega-construction near the Falls that, if built, could negatively interfere with the biodiversity of the conservation unit, the Iguaçu National Park.

*“...what Ordinance 070 did was – in response to a request from the then Minister of Mines and Energy, Dilma Rousseff – to allow the licensing of the Baixo Iguaçu, Mauá, Telêmaco Borba and Salto Grande do Chopim plants. Without this loophole, Mauá and Baixo Iguaçu would never have received their respective licenses. ” Fernando Jasper 14.07.2012 The League has also taken legal action to prevent Baixo-Iguaçu, another project of interest to Copel, also with serious technical flaws. Even with legal impediments, in June 2011 economists announced that “The president of Copel, Lindolfo Zimmer, confirmed that the company will have 30% of the Baixo Iguaçu plant, whose auction was won by Neoenergia ... ”.*

# 2005 - League action in Tibagi

In 2005, the Environmental League began to address issues relating to the Basin Committee, and how it was being trampled upon within the State Water Resources System. The League's first action was then filed in the district of the city of Tibagi on July 5th (Environment Day) this year, as this could be done in any district of the Tibagi basin. The action questioned the decision-making body regarding the use of water. The judge who judged this action was Dr. João Batista. In this episode, the League delivered extensive material and legislation on the State Water Resources System and asked for the participation of the Tibagi prosecutor's office. The expectation was that the judiciary would say: *stop with the licensing, the Basin Committee has to make a decision and the basin plan needs to be created.*

The public civil action filed by Filippin did not question the falsification of documents and the subtraction of information that was carried out in relation to the Mauá environmental study. This question was later asked through an investigation by Dr. João Akiromoto himself at the Federal Public Ministry of Londrina.

In December 2005, Rafael Filippin, the League's legal advisor, returned to Curitiba after a two-year academic retreat at the Federal University of Santa Catarina, in Florianópolis. There, the lawyer delved deeply into the issues of diffuse rights and multiple use of water resources in a postgraduate

course in environmental law, guided by renowned professor Christian Guy Caubet, a jurist who published important books such as *As Manobras de Itaipu*. With Filippin's return, the Environmental League decided to begin efforts in the field of judiciary. Rafael gradually added to the League's institutional structure not only knowledge, but also intense participation in the legal sphere, especially with regard to the multiple use of water resources. While Filippin was building a solid academic base, another large-scale initiative was thriving on the banks of the Tibagi, the Fprt.

# The Fprt - Tibagi River Protection Front

In public debates, Tom could easily set the Cnec crew adrift in the turbulent waters of old Tibagi. With a firm voice full of knowledge, he is able to attract the attention of the most skeptical of listeners. TV, radio and public hearings were battlefields where the preservation of the Tibagi River would gain prestige through the eloquent biologist. This was the environment that the Cnec and its allies would fear, and especially after the hearings they would avoid confrontations in front of the media as much as possible, which timidly exposed in the last decade the cunning plan of Camargo Correa's arm. At that moment, Tom looked for other ways to bring the truth to the population. For two months he undertook a personal effort to visit the basin's communities. He insistently sought to inform the population about the real threats that loomed over them, which was the construction of the Mauá dam.

For years, Copel had already been carrying out a type of unofficial pro-dam marketing with the Tibagi riverside communities, seeking to convince them that dams would be a good way to bring development and job opportunities to the municipalities. I realize that I attended some of these events organized by Copel and the Paraná Environmental Institute itself, which

were not official public hearings, but rather meetings to promote the enterprise within Telêmaco Borba and Ortigueira. Furthermore, the Cnec produced publicity material about the supposed benefits of the Mauá plant and distributed it to the population, the majority of whom were simple citizens with little political discernment.

During the period in which Tom interacted with the population and participated in some of these meetings, he noticed a worrying situation: the Tibagi Basin Committee, which could intercede with great influence in the supervision of projects in Tibagi, had been put aside by Suderhsa, an ally of the environmental agency, also manipulated by the state government. Meanwhile, licensing was approved within the lap.

The League needed more coordination. In December 2004, Grando had participated in the Discussion on Hydroelectric Power Plants in the Tibagi River Basin, at the Legislative Assembly of Londrina. Activity promoted by the University of Londrina. But it was in July 2005 that Grando undertook a Herculean effort. That year he traveled to Londrina as

coordinator of the Environmental League. In his suitcase, the biologist carried an important document, the principles of what would come to fruition in the Tibagi River Protection Front, the Fprt.

The goal was to strengthen the resistance that was spread across several flanks in the Tibagi Basin. The meeting took place at the University of Londrina and was attended by experts such as Professor Maiorque, Oscar Chibata, and Professor Sirlei Bennemann, who have deep knowledge of the Tibagi River. These three experts will later write an important study for the Iap and the Public Ministry that discusses the flaws in the Cnec documents. Eight years earlier, a meeting at the State University of Londrina (UEL) had produced the document Dams x Biodiversity, written with the participation of a group of researchers who had already been working in the Jataizinho region, including Maiorque, Chibata and Sirlei. After all, the Tibagi basin had been the university's research field since 1989. In this second meeting in 2005, in the Biology department of the

UEL, the ideal of the 1997 seminar was revitalized with the creation of the historical

document *Carta de Londrina* ([Documento 18](#)). And the Tibagi River Protection Front was established symbolically. In addition to researchers from UEL and the Environmental League, the Pastoral Land Commission, the Rural Workers Union of Telêmaco Borba, the Center for Human Promotion of Telêmaco Borba, the Nossa Senhora de Fátima Parish, Ong Mae, indigenous representations and others were present. representatives of the Tibagi Basin Committee. He also unofficially participated in the meeting with the Public Ministry. Over the years, other entities and NGOs joined the Fprt.

This epic meeting in Londrina was a tacit manifestation of the concern of various segments of society about the way the Mauá project was being presented. Tom returned to Curitiba with the feeling that this was a decisive moment in the cohesion of forces, and in fact it brought visible results in the public hearings a month later, in Ortigueira and Telêmaco Borba. Scientists, environmentalists, peasants and a small portion of the population began to tacitly demonstrate against the project. But it was certain that the Front was rowing up the river, on a long and painful

journey that would soon have its route changed by action of the Superintendence for Development of Water Resources and Environmental Sanitation (Suderhsa), the state agency responsible for water use.

Rasca Rodrigues, director of the IAP, had already provided his collaboration, but the Cnec needed one more document in hand to clear the way, it was the prior grant issued by Suderhsa. And to issue the grant, it needed the consent of the Tibagi River Basin Committee. The committee, responsible for approving the basin use plan, in turn, was made up of members of the Fprt, who would not give in to political pressure, much less agree with any act that would contradict the Water Law. What to do? The solution was yet another bet, little by little Mauá became the Las Vegas of Paraná. And as in this game bluff was a predictable card, documents generated at Suderhsa omitted the authority of the Basin Committee. The Cnec now had the grant issued by Suderhsa, it didn't matter if the DNA on the document was not legitimate, it was urgent to make another bet.

Just like the documents from the engineering company and the traces left by the

Iap director, Suderhsa would also not be able to sweep the dirt under the carpet.

On July 5, 2005, World Environment Day, the municipality responsible for managing river basins, Suderhsa, became part of the defendants in a public civil action([Documento 19](#)) of the Environmental League. The action was filed in the city of Tibagi, symbolically on the banks of the river. The accusation: issuing the grant without the consent of the Tibagi Basin Committee.

That same month, Cnec began publicizing work on the Mauá dam. One of the means used was the distribution of a 17-page booklet with basic language about the enterprise and its alleged economic and social advantages ([Documento 20](#)). The material was one of the ways to persuade the population to believe that only benefits were to come. According to Cnec information published in the media: During the busiest period, there must be more than 1,500 workers. Many of these workers can be hired in the cities of Ortigueira and Telêmaco Borba. In fact, the entrepreneur can teach the service to those who don't know how and, thus, train workers, both men and women. This promise did not

occur.



## Usina Hidrelétrica Mauá

Tudo que você gostaria de perguntar e não sabia pra quem

### Como o IAP chega à conclusão de que a usina deve ou não ser construída?

Para responder a esta pergunta, primeiro é preciso entender todos os estudos que são feitos na região para saber se a construção da usina hidrelétrica é possível.

Tem uma empresa em São Paulo, chamada CNEC Engenharia, que estudou toda a região onde deve ser construída a usina e ainda fez o projeto de engenharia.

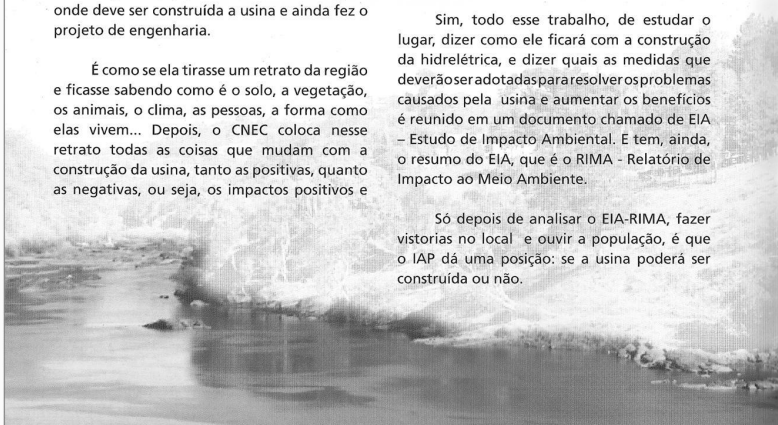
É como se ela tirasse um retrato da região e ficasse sabendo como é o solo, a vegetação, os animais, o clima, as pessoas, a forma como elas vivem... Depois, o CNEC coloca nesse retrato todas as coisas que mudam com a construção da usina, tanto as positivas, quanto as negativas, ou seja, os impactos positivos e

os impactos negativos. A partir de então, ela faz um relatório com todos os detalhes dessas observações, sugerindo, ainda, o que deverá ser feito para diminuir os impactos negativos e ampliar os impactos positivos. Por exemplo, existe um Programa de Salvamento dos Animais que diz que a empresa que for construir a usina tem que criar condições para que todos os animais possam viver e continuar se reproduzindo em outro lugar.

### Mas existe um nome para todo esse trabalho?

Sim, todo esse trabalho, de estudar o lugar, dizer como ele ficará com a construção da hidrelétrica, e dizer quais as medidas que deverão ser adotadas para resolver os problemas causados pela usina e aumentar os benefícios é reunido em um documento chamado de EIA – Estudo de Impacto Ambiental. E tem, ainda, o resumo do EIA, que é o RIMA – Relatório de Impacto ao Meio Ambiente.

Só depois de analisar o EIA-RIMA, fazer vistorias no local e ouvir a população, é que o IAP dá uma posição: se a usina poderá ser construída ou não.



# 2005 - IAP e Cnec confundem população

At that moment I began to follow the League's incursions and the development of Tibagi's issues more frequently, once again responsible for photographic and videographic records. On August 6th, in Ortigueira, the public hearing will be held. The meeting location was in the upper part on the east side of the city, in the sports center, an open area with few trees without paving or grass. The wind raised the dust around the gym, and the eleven o'clock sun turned the interior of the establishment into a veritable oven. Sweat dripped down the foreheads of the crowd of Ortigueirenses who filled the room, where thermal discomfort was worsened by insufficient lighting and feedback that made it difficult to understand the presentations. In this uncomfortable environment, there was a table at the front made up of the director of the IAP, Rasca Rodrigues Naome, mayor and secretaries of the municipality, and Cnec technicians, coming from São Paulo.

In the audience, the frontmost seats were occupied by representatives of civil society, including the Environmental League, the Kaingangs, researchers from the University of Londrina and Maringá, technicians from IGplan, as well as federal prosecutor Dr. Akiromoto and state prosecutor Dr. Robertson Fonseca, both from the Public Ministry. It was true that the directors of Iap and Cnec Engenharia were waiting for a critical moment in which they would be cornered by technicians, NGOs and the public ministry. They would have great difficulty arguing against the evidence of very well-prepared professionals with in-depth knowledge of Tibagi's

environmental issues.

However, it was important for Cnec to maintain corporate arrogance, after all it is not just any company, belonging to the giant Camargo Correa group. No matter how bad the conflict was for the Cnec, the situation could be remedied in the offices in Curitiba or Brasília. The hearing, whose objective was to submit environmental studies for public discussion and evaluation, began. And it started illicitly. For the hearing to take place correctly, it was necessary to have prior evaluation of the environmental studies by the environmental body, as required by art. 10, III, of Conama Resolution 237/97. This did not happen, and the director of Iap, Rasca, clearly knew. Acting in bad faith, disrespecting the local population and the legislation, resulted in Iap being seriously accused in a new public civil action by the Public Prosecutor's Office.

Rasca Rodrigues and Naome at that moment took the reins of political decisions and exposed the environmental agency of Paraná, which has important responsibilities in the state and a name to uphold, but which unfortunately was under the command of political positions duly allocated within the Requião government. In the action filed in 2005, prosecutor Akiromoto from the Public Ministry stated in the case: *Furthermore, if the evaluation had been serious, the study would have been returned to the entrepreneur, that is, rejected, as it was fragmented, omitted, and*

*absolutely useless for the purpose for which it was intended, ... .*

The Iap administration opened the hearing and gave the floor to the mayor of Ortigueira Antônio Magela, then to the secretaries and finally to the Cnec who proceeded with the presentation of the studies in incomprehensible technical language to the audience that included citizens, small farmers , riverside dwellers and fishermen. There were some interruptions from prosecutor Robertson, from the Paraná Environmental Prosecutor's Office, so that the technical and elaborate language was accessible to everyone. The presentation remained enigmatic with a clear interest in co-opting those present. It is worth mentioning the attempt by the mayor and the environment secretary of Ortigueira to try to convince the population about the unfounded social benefits that could come with Mauá. Before the law, the participation of the public administration must be impartial. Well, after this tiring mess it was time for debates.

In front of the audience and facing the Cnec technical staff, researchers from the Universities of Londrina and Maringá launched arguments questioning the adulterated report accepted by the environmental agency (Iap). These same researchers, who have their research field in the Tibagi River, had alerted the Iap about the flaws in the Environmental Impact Study, through a letter sent a

month earlier by the researchers Oscar Chibata and Sirley Benemann themselves. Furthermore, IGplan technicians, the board of directors of Minerais do Paraná (Mineropar) and the Environmental League had also officially communicated to the environmental agency about the failures and omissions regarding indigenous lands in the licensing process. The environmental agency was aware of its responsibilities. During the public hearing, before the attentive eyes of the Ortigueira community, this same group once again denounced the precariousness of the information in the documents held by the Iap.

IGplan technicians presented the corruptions in the document accepted by the environmental agency. The consultants who had already alerted director Rasca Rodrigues repeated their complaints in front of the public. The meeting was tense and exhausting. Two very moving moments were Marcos Bornischen's accusations. Marcos, whose competence I cited at various times in this book, was elated in the face of the Cnec's farce, presented indisputable scientific data, while the accused insisted in a disguised way on the authenticity of the adulterated documents. The Cnec lied in front of an audience made up almost entirely of the simple and riverside population of the region.

Another moment was the complaint by the Public Prosecutor's Office anthropology expert about the influence of the enterprise on the Kaingang population. The Cnec maintained its position of simply disregarding the Kaingang territory from its documents, which generated a furore from the anthropologist. Even in the face of this situation, Iap continued with licensing and supported Cnec's speech. Under pressure, the environmental agency confirmed the content of the document it had sent weeks earlier to the Public Ministry. There he assured that there would be no impacts on the indigenous community of Mococa and that is why he did not request Funai's presence, or at least invited it.

Conama resolution number 237 describes the risks of environmental licensing and warns that before public hearings the environmental body meticulously evaluates the studies, documents and projects presented, and if necessary, supplements must be requested from the entrepreneur or the company that developed studies, in this case Cnec Engenharia. When questioned by the Public Ministry, Noemi Moreira replied: We are still in the analysis phase. After the hearing, we will meet technically to make referrals.

If there are any additions, we will present them to the Community again.

On the one hand, the entrepreneurs sought to convince the population, this with the protection of the environmental agency. On the other, organized society researchers sought to present the flaws in licensing and the magnitude of the socio-environmental problems that a project like Mauá could bring to the region.

The mayor of Ortigueira Geraldo Magela and the environment secretary also co-opted with the entrepreneurs. Cenec representatives, director Rasca and other allies had a melancholic end after the debates, they were silent in front of those present. A sum of more than one billion and two hundred million reais was at stake – this is the amount to build the walls of Mauá –, the PAC's most expensive project for the South region. In this context, the embarrassment was worth it. September 1, 2005, the chosen location was the rectory of the State University of Londrina, another stage for discussions on the licensing of Mauá.

Researchers from the Universities of Londrina, Maringá and Ponta Grossa, the Public Ministry, Iap technicians and representatives from Companhia Paranaense de Energia Elétrica gathered there. This time Iap professionals were present who analyzed the Eia/Rima document forged by Cnec. They were unanimous in stating that there were an absurd number of 70 conditions for licensing to go ahead, among them was the need to carry out an ethnoecological study. Given this diagnosis, it would be unacceptable for the environmental agency to accept such documents. However, between the technicians at the Environmental Institute and the director there are visible divergences of interests and differences in power.

# Corruption: Iap grants prior environmental license

While the opinion of the Iap environmental licensing commission confirmed the unsanitary nature of the Cnec report, director Rasca Rodrigues had already orchestrated political agreements with governor Requião. The order that came from above was to release the license regardless of the quality of the Environmental Impact Study or the reliability of that study. Public hearings, meetings or the prerogatives of the Public Ministry were not enough to stop Mauá. There was a superior determination not only from the governor of Paraná but also from Dilma Rousseff. The faithful political squire inserted in the environmental body followed express orders to contradict the reports of the environmental institute's own technicians, if necessary. And it was.

Contrary to the constitution of Paraná, internal opinions of the Iap (Technical Opinion nº. 071/05-Iap-Diram/DLE, pages 570/592 of the P.A.) and judicial determinations of the Public Ministry, the President of the Iap Lindisley Rasca Rodrigues granted the Environmental License Preview No. 9589 for the Cruzeiro do Sul Consortium,

on December 7, 2005, authorizing the Mauá project to participate in the National Electric Energy Agency (Aneel) Auction. On September 15, Rasca had been questioned by the League ([Documento 21](#)). For this act that had a negative impact, lowering the concept of the environmental institution, the president of Iap was honored by Governor Requião with a more pompous position, that of president of the Environment Secretariat. Rasca surprisingly also held a second position within the state government, that of advisor to Copel itself, the biggest interested party in Mauá's promising business. In 2006, Rasca was accused of administrative improbity in an action filed by the Public Ministry. Among the footprints that the Cnec and the Iap board left behind, as they walked through a quagmire of illegalities, there was one that caused spasms. Both institutions fail to provide a basic and essential instrument for issuing licensing for infrastructure projects, that is, absolutely no one reported the Terms of Reference, yet the licensing was still carried out. Here there was also another failure to comply with the most basic requirements established by the resolutions of the National Environmental

Council (Conama 01/86 and 237/97).

The document entitled Term of Reference for Strategic Environmental Assessment - Hydroelectric Projects in the Tibagi River Basin, from 2002, was recommended by the Public Ministry to the Iap, which deliberately disregarded such demand (Recommendation no. 001/05, fl.75 of the P.A., of the MPF).

# Mauá Retrospective

The Mauá no Tibagi waterfall region had already been the subject of a licensing request years before. This was not the only attempt to plunder this natural resource. In the first attempt to build Mauá, the Environmental Institute of Paraná, following a recommendation from the Public Ministry, from the Attorneys of the Republic, Dr. Sérgio Cruz Arenhart and Elton Venturi, transferred the licensing to Ibama, where the request was finally filed. The economic unfeasibility had also been notified by the Public Ministry:

*"Environmental licensing, in addition to being conducted by an absolutely incompetent environmental body, is riddled with irremediable defects, which taint it in such a way that prompt judicial intervention is necessary to correct do so under penalty of serious and irreparable harm to the environment. Furthermore, the serious losses go beyond the environment, as they directly threaten the Union's public assets..."*

As we have seen, the electricity sector acts autonomously within the administrative structure, always implementing aggressive expansion policies as fully dictated by

developmental interests. supported by the Ministry of Mines and Energy.

In a large part of the country, dams are built haphazardly, without society discussing the legitimacy of such projects, or that socio-environmental compensations are minimally met. This is mainly due to the low level of citizen information and organization. Tibagi was an exception, an island in a sea of illegalities, there a small group of citizens disagreed with the impositions of the electricity sector and the construction lobby and decided to seek their rights. Although the resistance of the people of Tibagi is historic, the slow compulsory occupation of the river basin is determined by groups eager for profitable businesses. The board of directors of the Companhia Paranaense de Energia Elétrica, in addition to counting on the political influence of the local authorities that form the powerful Brazilian electricity sector, also has as godparents the governor Requião and the minister Dilma Rousseff, who in an article in the online magazine Valor Econômico in 2005, stated that “*unlocking*”

[hydroelectric] projects was its biggest objective.

# The Legislative Assembly of Paraná is under pressure

There are two articles in the constitution of the state of Paraná, paragraph 162/163, which give the Legislative Assembly the power to screen and evaluate each of these large hydroelectric plant projects. It was this sector's turn to be reminded of its legislative responsibilities. Since the first events in Mauá in 2002, the assembly has shied away from its most basic duties.

In 2005, the Legislative Assembly of Paraná saw its corridors crowded, there were citizens moving to the plenary session and journalists competing for the few square meters of the anteroom. A landmark event in the history of Tibagi filled the assembly, a rare moment of social mobilization in Paraná. Representatives from Fprt were present in the plenary, many citizens aware of the importance of preserving Tibagi. Some deputies were also present there. The delegation was made up of an important contingent of simple people, residents of the banks of the Tibagi, who traveled to Curitiba

at their own expense to add strength to the resistance and seek to raise awareness among the deputies. It was as if the sound of the Mauá jump insisted on carrying its appeal to the capital, close to the ears of the state's leaders. The event was organized by deputy Tadeu Veneri and deputy Luciane Rafain. The majority of deputies were not convinced about the seriousness of the projects beyond the limits of the capital, others were at least interested in the important topic. Even though the assembly postponed any concrete decision on the matter *ad infinitum*, the event had positive repercussions in the media. The leader of the Movement of People Affected by Dams (Mab), Hélio Meca, was also present there, serving at the plenary session. The Mab leader presented complaints to deputies about questionable and undemocratic actions by Copel, Eletrosul and Tractebel, another company in the electricity sector. Hélio Mecca stands out as an important, critical and lucid person about the dilemmas surrounding the social oppression imposed by the electricity sector. Mecca is a country man, a small farmer, hit by a dam in the 1980s. Overnight, he was forced to pack his bags, leave his land,

and migrate with his family to a resettlement far from his roots. Today Mecca is the voice of a million Brazilians dispossessed or expelled from their lands. Realizing the importance of Mr. Mecca's presence, Tom Grando went to the plenary table at the end of the session to, on behalf of the League, introduce himself to the leader. That was an important moment that sealed the union of two fronts that stood out as democratic movements, Mab and Fprt.

As for the Legislative Assembly of Paraná, time has shown that the deputies were unable to understand the seriousness of what was happening in the licensing of Mauá. At the time of the event, they were methodically informed by the Movement of People Affected by Dams, the Environmental League, deputies Veneri and Luciane and citizens of the Tibagi River. In addition to the power to promptly intercede in the Mauá Case, the assembly had the moral obligation to monitor the progress of the plant project. According to article 109 of the constitution of the State of Paraná, no infrastructure work can be carried out without due approval by the Legislative Assembly of the State of Paraná. The Mauá plant continued without such legal procedure. This was the first great opportunity missed by the assembly, capable of putting legal demands on the agenda and seeking lucidity in governor Requião's political plans. The deputies did nothing.

# Informing the population of Tibagi

A few weeks later the idea arose of bringing the charisma of Mecca and his story of struggle to the people of Tibagi, from the compulsory displacement of the community where he lived, in the north of Rio Grande do Sul, to his achievements as an activist. The son of small farmers, he grew up in the municipality of Mariano Moro, on the banks of the Ita River, in the Uruguay basin. In the early 1980s, dam projects arrived. There were 25 hydroelectric plants planned for the Uruguay Basin. 80 municipalities and thousands of small farming families would be affected. It was the turn of the Ita plant in 1984. The future of the Mecca family and many others was now uncertain. At that time there was no negotiation between the government and the affected people. In 1985, circumstances shaped a leader in that young farmer. In 1987 Mecca and collaborators had achieved a unique feat until then. Social justice began to exist in those corners of Rio Grande do Sul. For the first time, the people reached a resettlement or compensation agreement with the government before the construction of the project. Mecca was resettled in Chopinzinho, Paraná, along with hundreds of other families.

Some were resettled in four more municipalities in Paraná and others opted for compensation. Mecca makes a point of remembering, in lectures across Brazil and in a dozen other countries, that 70% of families removed from their lands were never compensated, they lost everything. In total, almost a million people have been expropriated since the beginning of the construction of large dams. This Brazilian citizen lived under the shadow of a large dam and there he learned to fight against the injustices of which he was about to become a victim. In 2002 Mecca extended its arms towards Tibagi and joined the Fprrt mobilization.

A new incursion into communities in Campos Gerais began, as far as Mauá da Serra. Fprrt gained an important ally, someone respected, with a lot of knowledge and who spoke the same language as rural communities. Tom was convinced that the people of Tibagi should know the experience of Mecca. In 2005 I had the opportunity to accompany Tom Grando and Rafael Filippin on the incursion through the Tibagi basin to Chopinzinho, there we rescued Mecca and continued our journey touring the main cities and towns that would be affected by the Mauá project, including Londrina, Ortigueira, Telêmaco and Tibagi . That was an important experience.

I had been invited to assist in the endeavor and take care of video recordings and photos of public meetings. This occasion was quite remarkable and revealing, there I got to know closely the communities of small farmers, fishermen, as well as the large urban centers in that region, and how each of these societies mobilized and understood the energy issue and the economic value of conservation. The population surrendered to the interests of powerful people learned about the life experience of Mecca and its journey against the predatory expansion of large dams. In the municipalities of Telêmaco Borba, Ortigueira, Jataizinho and Londrina, social justice echoed with the passing of Tom, Filippin, Mecca and a fourth member. It was sociologist Rogério, from Pastoral da Terra, who collaborated in contact and dialogue with riverside residents. At that moment a breath of truth and security reached the people. The passage of the Tibagi prophets left hope, raised spirits and instructed that population to resist in a peaceful and politicized way the oppressive policies of the electricity sector. Another mission remained on the way, a meeting with prosecutor Dr. João Akiromoto, in Londrina, who had been following the Mauá Case for a long time, and who had filed a lawsuit with the National Association of People Affected by Dams (Anab) in 2002.

In Londrina, mobilizations and statements in the media also came from an admirable effort by Professor Sirley Benemann, doctor in ichthyology and researcher at the University of Londrina.

The biologist was researching the waters of Tibagi, together with professors Mário L. Orsi and Oscar Shibatta - who participated in the first alerts since the Merganser duck article in the Folha de Londrina newspaper. Sirley was eagerly awaiting the arrival of Tom and his friends for a scheduled interview with an important radio station in the city. The live report resulted in a detailed discussion about the problems of extinction and water contamination of Tibagi, Londrina's main source of water. Sirley went to great lengths to bring her concerns to the attention of the London population. She visited dozens of cities and participated in public hearings, mobilized students, prepared scientific opinions for the Fprt's actions and for motions, in short, the researcher structured the Fprt's actions in that region of Paraná.

# Natural heritage auctioned

On October 4, 2006, six days before the new energy auction promoted by the National Electric Energy Agency (Aneel), in which the hydraulic potential of the Mauá plant would be auctioned, the Tibagi River Basin Committee decided approve a motion that recommended to Aneel the withdrawal of Mauá from the auction until the plan for the use of the Tibagi basin was completed and approved by the Committee. As we have seen, under the constitution the committee was an important democratic element, but for the president of Aneel, Jerson Kelman, it was a mere obstacle. Some of the League's actions prospered together with the Anab action, the one from 2001, which was later led by Dr. Akiromoto from the Public Ministry. Twice, the actions of the League and the Public Prosecutor's Office meant that Mauá was left out of the Aneel auction, once in February and

once in December 2005. Until phone calls coming from powerful people in the electricity sector instructed the president of Aneel to insert Mauá into the auction once and for all. How could a simple committee prevent the electricity sector plan?

Solemnly ignoring the decision of judges, the Public Ministry and the basin committee, Aneel auctioned the plant, illegally promoting the continuity of the Mauá dam project. Between 2006 and 2007, the Environmental League sought to organize important documents and collect information, recording the various events on video. Negotiations with all possible administrative instances continued. Less with the electricity sector than with A plus B, it made clear its option to act illegally. Since the meeting that Tom and Filippin had at Copel with Sergio Kramer and Dr. Regina Barcelar, the top management of the electrical company decided to cut ties and use all their economic power and political influence to make their concept of hydroelectric use of Tibagi prosper. Other notable events continued to occur in the Legislative Assembly, with the support of deputy Barbosa Neto, an important collaborator during this period. Deputy Tadeu Venere and Deputy Luciana Rafaim also sought political mobilization. On the other hand, appeals to deputy Cheida had no practical effect. When Secretary of the Environment, Cheida had shown little ability to intervene in the state's environmental policy, including discouraging Governor Roberto Requião from the idea of building Mauá. Negotiations with Rasca Rodrigues, director of Iap, had also ceased. Rasca was reported to court by the League for acting in a conflict of interest, and illegally.

Although Cheida and Rasca publicly stated that they were against Mauá, both acted in a contradictory way. At the time, the Environment Secretariat was boasting a mega environmental program with investments from the state and the German agency KFW, the goal was to plant five million seedlings on the banks of degraded rivers in the state of Paraná, the experts' expectation was that 20% of them would survive the adverse weather conditions and cattle trampling. This was one of the state's environmental flags at

the time of the Requião. To compare with the possible impacts caused only in the area designed for the formation of the Mauá reservoir we have the data: there are five million centuries-old trees and tens of millions of seedlings of native species in addition to endangered fauna species. The region is also considered the last ecological corridor that connects fragments of the Araucaria Forest with the Northern Seasonal Forest. This is the biological heritage that was at stake.

# 2007 - Klabin coal mines

The more than 800 pages of the Environmental Impact Study became part of Tom's mental library, the information as embedded in his skin as the crustaceans that cling forever to the shells of sea turtles. Every period, comma, every paragraph seemed to be memorized. At the height of the disputes, an almost intuitive curiosity led Tom back to the study of geology. The biologist had already been asked by some riverside dwellers about the old coal mines on the right bank of the Tibagi, in that region. This time he decided to make a surgical foray into the depths of this mystery. It was then that he discovered in the technical study a confirmation of possible damage caused by coal mines, with the opinion of chemist André Bittencourt who said, in a vague way, that it was a “well-known” subject. Tom knew the seriousness of the environmental liabilities of coal mines in

the Criciúma region in Santa Catarina, and realized that a bombastic issue had been left aside in Tibagi's history. It was necessary to go to the mines, do some reconnaissance, see them up close.

Convincing the owner of the area, Klabin Papel e Celulose, would be a remote possibility. River dwellers who usually access the banks of Tibagi to fish and wander along the river banks know the region like the back of their hand. These allies would be the solution, they could carry out a surgical incursion and return with photos and footage. In no more than a day, the 26 mines were located, photographed and filmed. The material that arrived in Curitiba fell into the hands of the Environmental League and with a bang revealed a crater in the forest that appeared to have been made by the fall of a meteor. Turquoise lakes, streams with water shining metallic yellow as if it were an anti-Garden of Eden revealing a bizarre secret. Nothing could be touched there, from the mineral coal that accumulated on the ground to the mixture of water and sulfur pouring uninterruptedly from the 26 mine mouths among the vegetation, everything was loaded

with heavy metals. As the excavations reached underground waters, the mine mouths turned into real chimneys pouring water from the depths day after day. Acid drainage – water with dissolved sulfuric acid – still takes all this toxic material straight to Tibagi. Streams, streams and groundwater constantly receive lead, zinc, cadmium and other highly harmful elements from the reactions of that enormous amount of mineral coal in contact with the water.

An open area of 10 hectares close to the banks of the Tibagi in the shape of a Dantesque amphitheater where absolutely no trees have grown in the last 15 years, was there to confirm the dramatic impacts of this type of exploration. In 1992, coal mining activities were stopped and the 26 mines were deactivated. But the result of years of removing coal from the depths was still there, producing tons of waste and mining byproducts. It all started in the 1930s. Mineral coal was used to generate energy in the furnaces of the Klabin industry. At that time, less attention was paid to this type of environmental damage. This lack of concern lasted for six long decades. After the

abandonment of the mines, the industry landfilled part of the waste and built a drainage structure and put up a few dozen signs for possible intruders with the inscription: danger. But the environmental liability continues to this day. On the ninth of September, riverside resident Ismair Carvalho da Silva collects a water sample nearby, in Saltinho dos Alemães. There was no time to waste, Ismair sent the bottle containing contaminated water to Curitiba on the same day. In just over a week, the Protection Front had the results of the analyzes in hand. Sample number 6005 issued by Sebraq (Brazilian Service for Environmental, Chemical and Biological Analysis) confirmed high levels of zinc, copper, lead and cadmium. It was certain that in that stretch of Tibagi, fish and riverside residents would be contaminated with heavy metals, including Ismair himself. Two days later, the Environmental League finalized a document with detailed content on the likely impacts and report 6005.

The dossier was sent to environmental agencies and the newspaper Gazeta do Povo. The initiative sought to alert the population of

Paraná about the dangers both for the fish fauna and for the riverside dwellers and the one million Londoners who have Tibagi as their only and precious source of water. The repercussions in the environmental agency, which released the license to Cnec, provoked a reaction worthy of military operations.

Within a few hours, a helicopter from Curitiba flew over the area with technicians and bureaucrats on board, while cars arrived at the site crossing the intricate network of roads that give access to the old mine. Even Rasca Rodrigues, one of the leaders of the Copel Case, blurted out the words It's not for alarmism, but it's a significant environmental liability. Soon, TV would report on the events that exposed the ecological disaster on Klabin Papel e Celulose's land. Chemical analyzes were ordered by the environmental agency, the reforestation company announced the injection of investments to minimize the large environmental liability, and promises of compensation from Copel were announced. Klabin, Copel and Iap swore with their feet together that the mine's tailings would

definitely be isolated at the bottom of the lake, more than meters deep, if Mauá was built. Of course, this is an assumption that no geologist would make in their right mind. But the doctor in Geochemistry, Professor André Bittencourt - responsible for the part of the technical survey that deals with water quality - according to an article published in Gazeta do Povo defends himself, stating that he did not explore the part about coal mines and waste for a operational reason. Rejects are only pollutants in contact with oxygen and, if they were immersed, they would not cause damage. These mines cause much more problems as they are than underwater, he assures. He also believes that, both in the river and in the eventual dam, the amount of toxic products produced by the deactivated mine is easily diluted in the water.

There is no history in the country of mines with acid drainage submerged by a large lake. Studies on these conditions are imprecise, the environmental variables are many and the safety guarantee presented by Bittencourt costs more than one billion reais to prove. But at these times, retreating would mean losing the bet and the solution presented by the geochemist was a great fit for Cnec, Copel and IAP and, at these times, for another authority: the State Department of the Environment, which never released the final reports on contamination. . The Tibagi River Protection Front

considered at this time one of the most serious impacts that Mauá could cause to the environment and society. In the view of technicians and scientists, the enterprise dreamed of by the Requião Government became less viable, or rather, unhealthy and unacceptable.

# 2007 - The contract

Even though Copel's victory had already been agreed behind the scenes of the Requião government, the company from Paraná would have to present the documents required by the National Electric Energy Agency (Aneel), the agency controlling the auction. Among them, three essential documents were manipulated by Copel and passively accepted by Aneel. The first and most critical of all, determines the economic viability of the enterprise. In other words, the information that practically supports the dam. The company that offers the cheapest product to the consumer, that is, the lowest kilowatt-hour price, wins the competition. The value presented by Copel was R\$ 112.00 per kilowatt/hour. However, this information contradicts internal studies published by Copel itself. In June 2007, electrical engineers Milton Francisco dos Santos Junior and civil engineer Hélio Mitsuo Sugai, both from Copel's Generation Expansion Planning sector, published a work entitled *Economic-Financial Analysis of New Hydroelectric Projects in Auctions of the New Model of Electrical Sector*.

This study, presented at the 27th National Seminar on Large Dams, in Belém, proved that a plant the size of Mauá, with a cost of 950 million reais, financed with Bnd's resources, would only be economically viable if the energy sales price at auction it reached

R\$ 120.00 per megawatt/hour. Eight reais is a huge difference in this context. Another aggravating factor refers to Resolution No. 3487 of the National Monetary Council, which does not authorize the Bnds to grant financing to companies in the Eletrobrás system - among which is Eletrosul. Other contingencies also prevented the participation of the Bnds: they were the court rulings regarding the League's actions which, among others, alerted to the falsified EIA/Rima documents. Raul Munhoz Neto, generation director at Copel, who had announced the Bnds' participation, was also aware of another snafu. On July 3, 2007, in a ceremony held in Brasília, the contract was signed between the Cruzeiro do Sul consortium – the trade name of the merger formed by the majority Copel and Eletrosul. The instrument delivered to the Minister of Mines and Energy, Nelson José Hubner Moreira, and the president of the National Electric Energy Agency (Aneel), Jerson Kalman, contained another serious error. The first and fifth clause of the concession contract for the use of public property for the generation of electricity states that the Mauá plant should have 361 megawatts of installed

power.

However, the inventory of hydroelectric uses of the Tibagi River defines the optimal use of the Mauá plant as being worth 385 megawatts. As we saw, Mauá's hydroelectric potential was tendered and contracted for a lower value: 362 megawatts, which substantially changed the assured energy, a variable used to calculate payment for the use of the public asset. On a good note: the union was defaulted by the Cruzeiro do Sul consortium for non-compliance with art. 5th of Federal Law No. 9,074, of July 7, 1995. The difference of 23 megawatts is equivalent to millions of reais. Despite all the illegality of the Copel case, the Cruzeiro do Sul consortium assumed new commitments with the signing of the contract. Two of them would be to bear the costs of the inventory carried out by Copel itself in 1996 and the criminal study by Cnec Engenharia. The first in the amount of 758 thousand and the second in the amount of 5.3 million to be paid within a period of thirty days as determined by Aneel's regulations. But it doesn't end there. The documentation should also contain information about the Paraná construction company belonging to the J. Malucelli group, chosen without a bidding process and without proven competence as required by Aneel's regulations. This scheme will be discussed later at the start of works in Mauá. But for now we are left with Copel's statement when formally notified by the Environmental League:

*J. Malucelli professionals participated not only in the construction of the Espora plant, but also in the execution of preliminary works on the Iguaçu River (...). The execution of such works alone sufficiently attests to J. Malucelli's technical capacity.*  
Copel

Although the Environmental League formally questioned Aneel, the Union and State Court of Auditors remained silent. The only manifestation came from the Bnds through lawyers Mara Rocha Aguilar, Thaís da Silva Freire and Paulo Vasques de Freitas who, instead of responding to the League's legitimate inquiry, warned: ...any judicial measure to be taken by the Environmental League in the face of the Bnds should be considered foolhardy. It is no surprise that in 2010 the English magazine The Economist harshly criticized the BNDs' financing policies, which prioritize major works. While the Copel case exploded into illegality, governor Requião's riot police sought, through contacts in the state machine, to revoke the injunctions of actions that were being processed in the judiciary and also to clear some impediments still pending in the environmental agency, the IAP. Also in June 2007, a happy celebration recognized the League's work as being of public utility. The NGO received the Ecology and Environmentalism award granted by the Curitiba City Council.



A Câmara Municipal de Curitiba, capital do estado do Paraná, no uso de suas atribuições legais e tendo em vista o Decreto Legislativo n° 008/2007, de 22 de Maio de 2007, por indicação do Vereador Aladim Luciano, confere a **Liga Ambiental**, o **"Prêmio Ecologia e Ambientalismo"**, pelo destaque alcançado através de ações em defesa da natureza, do meio ambiente e dos interesses ecológicos.

Palácio Rio Branco, em 27 de Junho de 2007.

Vereador *Aladim Luciano*  
PROPOSTA

Vereador *João Cláudio Derossi*  
PRESIDENTE

# 2008 - Vitor Hugo

In 1862 Victor Hugo published his main work, *Les Misérables*. The French writer and thinker compiles in his novel starring Jean Valjean, an ex-convict who spends 19 years in the galleys, 4 years for stealing fruit to feed his sister and 15 for attempts to escape. He finally escapes his unjust prison and changes his name to disguise himself. Years later Jean Valjean becomes a successful businessman, and reveals an exemplary character. With the money from his hard work he brings benefits to his village and carries out charitable works. When Valjean learns that someone else is being arrested in his place, he decides to turn himself in, showing once again that he is a man of principle. The volumes of Victor Hugo's work report the social and political relations of 19th century Europe, and in the foreground the overcoming of Jean Valjean and his admirable ethical conduct. In February 2007, Vitor Hugo occupied the position at Iap left by Rasca Rodrigues, for a long mandate of five years. Position of trust of the Requião government. However, the eponymous version of the illustrious French thinker proved in the first months of his term to be the absolute antithesis of one of Victor Hugo's most charismatic creations, the protagonist of *Les Misérables*, Jean Valjean.

With the collaboration of Vitor Hugo Burko, better known as Burko, the League's predictions became the worst. Deforestation at the construction site and instability for more than 300 families would be the first plagues of the Copel case. Both Rasca and Burko maintained a close relationship with the

director of Copel, Rubens Ghilardi, who had held the position since 2005. This channel was essential for Copel and the IAP board to settle the agenda without the need for interlocutors. Meanwhile, the legal body of the Cruzeiro do Sul concessionaire (Copel and Eletrosul) managed to once again use its influence and overturn the injunctions that had prevented Mauá since the auction in 2004. In March 2010, Burko was convicted of criminal liability, for irregular hiring. Crime committed when he was mayor of Guarapuava (PR). The president of the Environmental Institute of Paraná (Iap) was dismissed from his position as director by governor Roberto Requião, as determined by the Second Criminal Court of Guarapuava. Minister Ellen Gracie, of the Federal Supreme Court, rejected the request to suspend the conviction made by Burko, who in a last attempt sought to get rid of the sentence and continue his harmful political career within Iap. Before being appointed to command the environmental agency, Burko was mayor of the friendly city of Guarapuava. At the time, it was the municipality that received the most fines from Iap itself. While still mayor, he was accused of hunting wild

animals and negotiating environmental licenses. But it was as director of Iap that the politician caused the greatest damage to the environment and society in Paraná.

During the years of Burko's disadministration, the public body released environmental licenses in absentia, promoting irregular works and activities. Paraná's environmental agency continued to be corroded by politicians and opportunistic minions of the Requião administration. Among the scandals promoted during the Burko administration is the deforestation of 245 hectares in the Serra da Esperança Environmental Protection Area (APA), an area equivalent to 835 football fields. Interestingly, the license for deforestation occurred in Guarapuava, where Burko was mayor. The cut-off notification was signed by one of his supporters, Harry Teles, director of Control and Inspection at Iap. The document did not have a protocol with the aim of circumventing any technical impediment within the institution. No Environmental Impact Study or legal reserve endorsement was required. But it was with the São Francisco operation, launched by the Federal Police in 2010, that

recordings made proved the involvement of Burko, Rasca and Harry Teles in the sale of environmental licenses and animal trafficking. With Burko's proven competence in fraud, it would not be difficult to make new arrangements so that the second license for Mauá could be issued, the Operating License. Burko had the help of Harry Teles, director of Environmental Resources Control and a longtime Iap employee, with enough knowledge to circumvent the institution's bureaucracy. As planned, Burko's collaboration was exemplary in ensuring that Mauá was once again unobstructed by the environmental agency. This would put Burko's head in the spotlight, but at the state and federal level this was of no importance, the Iap director was just another puppet in the intricate network of influence.

As in chess strategy, some pieces must be sacrificed for the game to continue. Before being dismissed, Burko left behind a very important document for Requião and Copel, the Operating License for Mauá signed and filed on March 24, 2008. Copel and Eletrosul, the concessionaires of the Mauá hydroelectric project, had at that time yet another essential document, even if constructed under the noisy illegalities of the Copel case. In possession of the contract with Aneel, the Iap Operating License signed by Rasca and the Installation License signed by Burko, in addition to the personal collaboration of governor Requião, the majority Copel, deems itself capable of starting the works upstream of the jump Mauá in Tibagi, between Telêmaco Borba and Ortigueira. Journalist Fábio

Campana's blog mentions that the Cruzeiro do Sul Consórcio documents, in addition to being false, also lacked other legal provisions and authorizations from state bodies. But Requião was in a hurry, the 2010 election year arrived, the agreement with Dilma Rousseff was pending and the work had to begin. One month after the license was released, the NGO Liga Ambiental sent the Paraná Public Prosecutor, Olympio de Sá Sotto Maior Neto, a formal request for a civil, administrative and criminal investigation against the director of Iap, Victor Hugo Burko. In the representation, Burko is accused of disregarding Funai's instructions not to grant an installation license until further investigations into the indigenous people of the area where the government insists on building the Mauá dam, between Telêmaco Borba and Ortigueira.

The absent Funai authority, in one of the rare demonstrations in the history of Tibagi, had warned the environmental agency that the delimitation of impacts on Kaingang communities in Paraná complies with principle 15 of the United Nations Conference on Environment and Development. Conama resolution 237/97 also determines that the prior license (LP) should have been canceled, due to non-compliance with the 70 conditions highlighted by technicians within the Iap. The installation license (LI) should never have been granted, explained Rafael Filippin, according to the Paraná-online website. At the same time, Tom Grando filed a Popular Action, filed with the Public Prosecutor's Office in Londrina, which questioned the Consortium about the validity of the environmental licenses and the undue payment of five million to Cnec Engenharia. (This action is related - Distribution by dependency - to Public Civil Action nº 2006.70.01.004036-9). Between family and work, Tom Grando and Rafael Filippin found, during sleepless nights, the refuge of knowledge, time and inspiration necessary to weave the actions that would soon be in the hands of the Public Ministry. Between 2008 and 2009 great anguish spread among those who sought social and environmental justice, the dirty game of the rulers insisted on drowning the Tibagi Protection Front (Fprt) in deep waters. Old Tibagi did not prostrate, because indignation is the food of the strong. During this same period, the Fprt fought the largest peaceful battle in the entire history of the resistance. The League had already filed more than 16 legal appeals, including actions and representations.

Letters were sent from the NGO to several international

authorities, including John Briscoe and Michael Carroll, both from the World Bank, the latter being responsible for matters relating to the environmental and social sustainability of projects for Latin America. In the same year, the Movement of People Affected by Dams (Mab) published a revealing document about the oppressive logic of the electricity sector entitled *The Struggle of People Affected by Dams against Transnational Companies, for Rights and for Energy Sovereignty*. There, Mab points out that 7 out of 10 families did not receive any type of compensation. A large part of this contingent, mainly made up of small farmers, ends up in pockets of poverty in cities, victims of a lack of jobs, land or housing. Today there are more than 400 plants located in the country. Of these, 156 are large hydroelectric plants and more than 254 are small power plants, better known by the acronym PCH. The Ten-Year Electric Energy Expansion Plan 2007/2016 presents a set of 90 hydroelectric plants that total an expected generation of 36,834 megawatts. According to the 2030 National Energy Plan, there is a forecast of adding another 130,113 megawatts of electrical energy to the Brazilian system. Of this total, 94,700 megawatts must come from water sources: 87,700 megawatts through large hydroelectric plants and 7,000 megawatts generated in small plants. The planned investments are in the order of 500 billion reais – this amount can vary greatly.

Mab also warns in its report that the recent study *Environmental licensing of hydroelectric projects in Brazil: a contribution to the debate* carried out by the World Bank, at the request of the Ministry of Mines and Energy, presents strategies to dismantle the country's environmental laws and requirements. The study is presented by the government, by national and foreign private companies, and

by International Financial Institutions, such as the IMF, Bird and the World Bank. One of the suggestions proposed there is the issuance of single licenses per river basin. In other words, once licensed, the Basin would be free for maximum use, that is, the unrestricted construction of plants in sequence, or staircase.

## **Dioceses unem-se à Fprt**

The harsh winter in Campos Gerais brings a kind of fog over the freezing waters of Tibagi that persists until the late hours of the morning. It is a scenario reminiscent of those mentioned in sacred scriptures, an almost celestial environment. In the winter of 2008, Tibagi sent his angels and archangels up the river carrying a cry for help to the people of Ponta Grossa. On July 12, the Retreat of the Holy Popular Missions in the Diocese of Ponta Grossa brought together more than 2,500 citizens in a demonstration against the construction of the Mauá dam.

All parishes in the Diocese of Ponta Grossa agreed to fight against the plant and to pressure Governor Requião and the federal government so that the Mauá project was suspended. We People of God from the various parishes and municipalities that make up the Diocese of Ponta Grossa, based on the ethical criteria of the Gospel of Life and in opposition to the logic of neoliberal capitalism that brings within it the germ of exclusion and destruction of cultures, peoples and Environment To satisfy the desire for easy profit, we positioned ourselves completely against the attempts of the state and federal government to build the Mauá Hydroelectric Plant. People of God of the Diocese of Ponta Grossa - Retreat of the Holy Popular Missions The Parish of Our Lady of Fátima in the

Municipality of Telêmaco Borba, together with the Redemptorist Missionaries, respectfully raises some concerns regarding the possible construction of the Mauá Hydroelectric Plant, as if the governor Taking this further will result in one of the most serious environmental impacts in the history of Paraná, as it will destroy the conditions necessary for the survival of the Tibagi River and all its mega-biodiversity, in addition to putting public health at risk. We are all aware of the flaws and omissions in the Environmental Impact Report, already proven by the Federal Public Ministry. However, the exercise of democracy was not enough to remove Governor Requião from the authoritarian plan to build the Mauá dam. Resistance continued.

# Brasília, covering the Federal sphere

1,000 kilometers away, Ibama and the Ministry of the Environment had contingencies for the Amazon, the Cerrado, the Pantanal, except for the last areas of biodiversity in Paraná, including Tibagi. Marina Silva herself found out about the issues at Tibagi. In mid-2007, the director of IGplan, Francisco Lange, current director of biodiversity at the Secretary of State for the Environment of Paraná, was with Minister Marina at a restaurant table, on account of an environmental event in Paraíba. Lange had the minister's attention to explain in some detail about what was happening below the tropic of Capricorn. At that time, the minister was being shredded by the head of the Civil House, Dilma Rousseff, and it is not known how hard she worked to take forward Lange's denunciations. With the departure of the ministry, in May 2008, Marina left another

legacy to her successor, Carlos Minc. It was the Belo Monte plant, in Pará, where other atrocities against the environment and the people undermined Minc's attention. Tibagi was definitely not part of the minister's equatorial agenda.

As for Ibama, not even the demands of the Public Ministry were answered, a kind of compulsory silence strike. The Protection Front then tried to get in touch with a very responsible person within Ibama, someone who would do whatever he could to make Ibama show its face. Andrea Vulcano made a career in Curitiba, was a legal attorney and superintendent of IBAMA in Paraná. She worked on several environmental studies for state and national conservation units, worked with Tom Grando on the management statute of the Iguazu National Park. Andreia belongs to a decision-making level close to the summit, she understands what is happening in the Tibagi basin and is aware of Ibama's responsibilities. Tom Grando looked for his friend and Ibama attorney general in Brasília. At the meeting, the coordinator of the Environmental League insisted that Ibama could not ignore the events in Paraná, at that

time the federal institution was already the defendant in most of the public civil actions conducted by the Public Ministry. Although the prosecutor was aware of the veracity of Tom's arguments and was predisposed to help, her personal effort, unfortunately, had no practical effect. After a second meeting with the prosecutor in Brasília, Tom and Rafael Filippin heard through the corridors of Ibama that there was a determination coming from the Esplanada dos Ministérios and the Civil House that literally told Ibama and Funai to shut up. Tom and Filippin's efforts in the Federal Capital faced a cold and hidden logic under the political interests and plans of the Lula government's Growth Acceleration Program: Mauá should be raised at all costs.

Months later, Tom and Filippin contact the president of Ibama's superintendence in Paraná, Álvaro Carneiro, founder of the Environmental League. However, Álvaro's words were discouraging: *when it comes to Mauá there is simply no dialogue with Brasília, our hands are tied*. It became clearer that

nothing would be achieved with dialogue between the people of Paraná and governments colluding with the strategies of the electricity sector.

# THE Lady of Brazil

In the first half of the 20th century churches, monasteries and museums were gradually missing their relics. In this period of history, among so many comings and goings of a country that was discovering itself, a type of trade that was destroying historical and cultural heritage was rapidly developing, it was the trafficking of sacred arts. The map of this daring activity included scenes from the bucolic northeastern interior to large cities. The obscure facts leave Brazil and reach Portugal and Spain. This story was told by Humberto Gomes de Barros in his novel entitled *Nossa Senhora do Brasil* released in September 2009. After all, after retiring in July 2008 from the position of president of the Superior Court of Justice, there is nothing more edifying than making the most of your time a dedication to the culture and history of Brazil. The keen perception with which Humberto investigated a subject forgotten by history books, the trafficking of sacred arts, grew inversely to his contempt for contemporary history, the one that was under his hands, in his office - while he was president of the STJ - and under its decision-making power.

On July 18, 2008, one day before the minister retired, he, in a symbolic moment of farewell to his reign, signed an order revoking the injunction that prevented the construction of the Mauá dam. Far away Rubens Ghilardi, Requião and Dilma Rousseff each celebrated in their own way. Finally Mauá would be built. Impregnated with the ink that stamped the document was also the mark that the minister

would never understand the mysteries of his own novel: thefts of sacred arts, the lack of concern for history, citizens and culture. The president of the STJ was unable to understand the importance of the historical, social and environmental achievements that came from the south of the country. And it prevented Brazil from freeing itself, at least a little, from the chains that have condemned it to ethical inertia since the 20th century and made it resign itself to immorality and illegality in the name of hidden causes, which hardly bring benefits to the confines. from Brazil. While Huberto enjoyed the motivation for his literary career, Imã Rosa foreshadowed a new peaceful insurgency on the banks of the Tibagi. The Protection Front continued unscathed! Sister Rosa is a very nice little lady, with a smile brightened by her belief in kindness, social and environmental justice. Born in Indiana, United States, Rosa Marthin grew up among goats, horses and pigs on a small 60-hectare rural property. Her father, of German and French descent, and her mother, a mix of Irish and Dutch, taught their twelve children to call the farm animals by the names they each received at birth.

There, the forest was never called bush, but rather oak, pine, cedar and the numerous species they knew and used in extractive activities. His family heritage was peaceful coexistence with the nature of the American Midwest. Sister Rosa, who is part of the Human Promotion Center, in Telêmaco Borba, has never spared efforts to bring culture and justice to small communities. The first sisters of the Congregation of the Sisters of the Holy Cross who arrived in the United States took six pianos on a six-month journey on ox carts from New York to the far reaches of Indiana, a work of perseverance. Following the ritual of her predecessors, Sister Rosa seeks to guide the Tibagi communities on the importance of rational use of river waters and the damage that a dam would cause there. The God who faces the arrogance of the electricity sector and who is at his sister's side is not the one whose benevolence is only for men, he is a savior who is more aware of environmental issues and concerns for nature and all beings. Sister Rosa, graduated in biology from the University of Notre Dame, constructed with scientific rigor the words of wisdom that she has brought to riverside dwellers and small farmers in the Telêmaco Borba region for over 35 years. On March 14, 2009, another demonstration took place in Jataizinho (21 km east of Londrina). It was the eighth Celebration of Waters. There, at the entrance to the city, the population began a walk to the bank of the Tibagi River, covering the entire length of the bridge in the direction of Jataizinho to Ibiporã.

The mobilization, which took place on the international day to combat dams, sought to make the population aware of the importance of water for the lives of all living beings. There were more than 300 citizens, many from Jataizinho and others from Ortigueira, Telêmaco Borba and Londrina, three important cities in

the Tibagi basin. They were simple people from Paraná from the riverside investing their time, their savings and concern in defense of a common good. This was the case of brothers Gabriel and Emanuel Coutinho da Silva, aged 16 and 18. Gabriel, a student at the agricultural school, and Emanuel, an agricultural technician, left Tamarana, 62 km south of Londrina, armed with their convictions and with a single objective, to save Tibagi. Emanuel explains that *"We want to show the importance of preserving nature. In this case (of the construction of the plant) the fauna and flora of the basin will disappear. There are many other ways of generating energy, the government just needs to invest more"*.

Father José Onero, from the Archdiocese of Londrina, expressed his indignation: *Furthermore, the dam will kill the biodiversity of the river basin and we will use water of worse quality because dammed water is dead water.* Rogério Nunes, sociologist at the state coordination of the Pastoral Land Commission (CPT), stated that the church has the important role of reflecting, informing and pointing out irregularities in cases of environmental damage.

Sister Rosa Marthin warned: *This is the opportune moment for awareness, where we must choose between life or death, abundance or destruction.* The construction of the plant will not only harm the population of Telemachus, it will have an impact on the entire world. In the religious's perception, the global economic crisis is diverting the population's attention from a more serious factor: the ecological crisis. Sister Rosa was arrested three times

during the construction of Itaipu, during the military regime, but was released through the intervention of the American government and a safe passage from California, more precisely from the direction of the World Bank, which financed the work. During these years, carrying out a special and daring mission, Rosa Marthin came across a crowd willing to overcome the limits of inertia in society and raise the flag of justice. She likes to remember the collaborators she met along the way, including prosecutors and judges who made an effort to understand Tibagi's issues and recognized the legitimacy of the accusations of illegality made by the Protection Front.

# The future of stocks

The environmental licensing of the Mauá Plant was interrupted for more than a decade due to almost two dozen lawsuits filed, most of them by the Environmental League. However, the great victory is due to the cohesion of forces of teachers, students, environmentalists, riverside dwellers, indigenous people, magistrates and researchers from the main universities in the state, including the State University of Londrina, UEL, which studied the Tibagi and its importance ecological since 1984. The TRF had understood, quite consistently, that the Integrated Environmental Assessment should be carried out as a condition for granting installation licenses for the plants designed for Tibagi. This injunction was the result of the Public Civil Action filed by the National Association of People Affected by Dams (Anab) in 2001, currently conducted by the Public Ministry. The defendants in this action are Cnec, Copel and Ibama. This is one of the actions with partial victory. Another 13 actions filed by the Environmental League are being processed in parallel.

However, the argument presented by the Union (interlocutory appeal) to the STJ and accepted by minister Humberto Gomes harmed the League's actions, all those dealing with environmental studies (EIA/Rima) and licensing will tend to partially lose their purpose. In other words, with the *fait accompli* - the construction of the dam - everything that was being discussed in court cannot have any effects for the future. The dam cannot be undone. What was valid is clear in the files of Minister Humberto Gomes de Barros:

*“there is, therefore, no risk that environmental protection will be forgotten...[the interruption of the Mauá plant project] causes immediate serious damage to the administrative order and potentially absolutely*

## *harmful damage to the public economy”.*

Before the public civil action reached the Supreme Court of Justice, the construction of Mauá was prevented by an injunction issued by first-degree judge Edigar Liviman of the Federal Regional Court of the 4th Region in Porto Alegre. But it did not prosper in the STJ, where the arrangements had previously been arranged by political positions in the electricity sector. In the following months, the Minister of Mines and Energy would exert efforts to expand control over the TRF4, from which new impediments could arise. The entrepreneurs happy with the real goal spread through the mainstream media the benefits of the project and the losses caused by the delay in the works.

Now was the time to appear in the newspapers and on TV announcing another big step towards the development of Paraná and Brazil, without forgetting, of course, the promises of environmental and social compensation - which, if they occur at any level, will be the result of a few more years of legal battle and efforts by the Fprt.

# Commencement of construction at Mauá

On July 21, 2008, the Cruzeiro do Sul Consortium issued a work order for the construction of the Mauá Hydroelectric Plant. The mobilized society and more than 16 legal actions were finally cowardly knocked out by the interests of those in power. The Environmental League, the NGO that contracted against the construction of the plant, says that the position of the Requião government is regrettable, which, through Copel, disregarded all considerations, said Rafael Filippin, the League's legal coordinator. Copel's president, Rubens Ghilardi, breathed a sigh of relief. I finally managed to find the electrical sector mast under the revolting waters of Tibagi. Old Tibagi, who persisted unscathed for centuries, was hit in the chest by the interests of frivolous governments and

archaic minds that resisted and left power. But it was necessary to act, this was no time for celebrations. Just three days after Minister Humberto Gomes' order, trucks, jackhammers, tractors and motor graders traveled through the pristine forests on the banks of the Tibagi.

It was necessary to deforest the area to be installed at the construction site as soon as possible and place 400 workers on the Copel site between Telêmaco and Ortigueira. At this stage it was unlikely that the League and the Public Ministry would reverse the situation. To ensure the invasion, Copel obtained authorization from judge Alexei for earthmoving and slope containment services. The request did not mention that such services would be for the Mauá works. The corruption perpetuated in the Copel Case currently included another bombastic episode, the contract between the Cruzeiro do Sul consortium and the construction company J. Malucelli. This document foresees expenses of around 2/3 of the 950 million planned for the work - the value should exceed 1.2 billion. The contracting took place without a bidding process, once again following the illegality protocol. The J. Malucelli group from Paraná

is made up of the radio stations CBN and Band News, Paraná Banco and the construction company J. Malucelli S.A., which will receive the billion-dollar jackpot. In the concession and bidding laws, in Aneel's auction notice and in Copel's technical instructions, there are provisions that require project executors to have technical experience in the construction of large works. The company J. Malucelli only presented a certificate relating to the Espora hydroelectric plant, in Goiás, with an installed capacity of just 32 megawatts, which is equivalent to less than 10% of the 360 megawatts planned for the Mauá plant. This document was accepted by Copel without any objection. In the same month, journalist Telma Monteiro published on her blog an article about a major accident at the Espora plant, on the Corrente river.

This is an important river in the region, in addition to having its sources in the Emas National Park, one of the last strongholds of wildlife in the Brazilian Cerrado. The article, entitled Hydroelectric Espora: the disaster with public money, highlights that 80 properties suffered directly from the accident, 140 square kilometers were flooded, two

bridges (one connects the municipalities of Itajá and Itarumã) and roads were destroyed, three municipalities were affected by serious environmental impacts. The Federal and State Public Ministry (of Goiás) decided to investigate the facts. On July 11th, a public hearing was held in the municipality of Itajá. The director of Espora Energética S.A., whose majority shareholder is J. Malucelli herself, and the engineers from that construction company, the company responsible for the work, did not appear to answer the CPI's questions. At the time, complaints were published on Telma Monteiro's blog: At the end of 2007, cracks were detected at the plant and in January 2008, it ruptured, causing a major environmental disaster and, to this day, 6 months later, those responsible have not been identified and the victims were not compensated. In the same article on Telma Monteiro's blog, José Dias regrets the episode and leaves an indignant comment:

*I'm a Serranopolis citizen and I'm outraged. I remember at the time the environmental impact studies [and the socio-environmental damage] that the Espora Plant would cause. At the time, during the study phase, I was against the implementation of this*

*plant and I am against any other on this river. They sent Engineers to our Municipality... saying that just for Serranópolis (GO) there would be more than 500 jobs and the impact would be minimal, that the municipality would profit from this and blah, blah, blah, and the worst thing is that the Mayor and Secretary of Environment believed. When I questioned them, they said they had already carried out flooding studies. ... it seems to me that some farmers had to go to court to receive an insignificant amount for the value of the lost land. How many animals died, how many trees dried up, and biodiversity!? And they still want to build more plants! I don't believe that in this CPI they will find someone to blame. I would like to be wrong and not have any more plants open in Rio. Unfortunately, our population is small and there are few protesters. José Dias Carvalhães.*

J. Malucelli became the treasurer in the Copel case. Governor Requião, who in the past was a voracious critic of Joel Malucelli, now celebrated the feat by hugging the businessman. Andritz, VLB and Sadefem are other companies working on the works.

# Virgin of Nuremberg

Also known as the Iron Lady, the Virgin of Nuremberg was a torture device used in medieval times, after the 16th century. It was a 2 meter high iron armor that functioned as a form in which the prisoner's body was pressed. Inside the armor, iron spikes slowly stabbed non-vital organs, thus the victim suffered a slow and painful death. The Middle Ages have been around for many centuries, however the Virgin of Nuremberg is haunting Paraná society. The law, the constitution and citizenship were stabbed in the back by those eager for profit and power: Cnec (Camargo Correia), directors of Copel, Dilma Rousseff, governor Roberto Requião, Rasca Rodrigues, Vitor Hugo Burko, among others.

The fight against the Mauá plant goes beyond the limits of Tibagi. The resistance is against the oppressive system that emanates from the soul of the electricity sector, whether in Tibagi, Corrente, Iguaçu, Xingu, Tocantins or Madeira. A system dominated by positions that co-opt personal and political interests rather than the interests of the nation. Tibagi was just a wound on a mutilated body.

The Tibagi Protection Front, the Public Ministry work, above all, to prove that crime does not pay and that companies like Copel, built with the efforts of people from Paraná, become healthy companies at the service of society and with respect for the environment. Under the shadow of the Middle Ages, demonstrations against the shameful work at Tibagi took place week after week in cities such as Curitiba, Londrina, Telêmaco, Ortigueira, among other locations in the Tibagi basin. The population was clearly outraged. Once again, Copel and Eletrosul's communications department were all over the media, spraying stories about the

successful victory against those who oppose progress. In the same week, Eletrosul published an article on its corporate website criticizing the delay in the Mauá work:

*The delay in the entry into operation of the Mauá Hydroelectric Plant within the deadline set by the National Electric Energy Agency (Aneel) could cause a deficit in electricity production and cause disruptions throughout the national electrical system. Among them, the replacement of the energy to be produced by the plant with thermoelectric production, around five times more expensive than hydroelectric production, in addition to posing more risks to the environment, as it uses the burning of fossil fuels, producing gases that increase damage. of the greenhouse effect. Eletrosul Press Office.*

Eletrosul clearly violated an ethical principle, the truth. In response to the numerous articles published in the media celebrating the victory of the Cruzeiro do Sul consortium (Copel and Eletrosul), the legal advisor of the Environmental League, Rafael Filippin, publishes a comment on journalist Fabio Campana's Blog:

*Brazil wastes the equivalent of 20 Mauá plants. In other words, it is not your lack that will throw the country into a blackout. The risk of shortages is the result of the electricity sector's obtuse insistence on wanting to obtain all energy from a single source. Diversification is not only timely, but also absolutely necessary. And saying that wind energy is more expensive than hydroelectric power is yet another absurdity that can no longer be tolerated.*

*For example, Mauá was tendered for the price of R \$112.00 per megawatt/hour. However, this price is insufficient to give the project a return of 12% per year, nor is it capable of paying for all the socio-environmental damage that the plant can cause. And both Copel and Eletrosul are unable to technically contest this fact. Large dams are technologically obsolete white elephants that generate profits only for their builders and direct operators, while the loss remains with the taxpayer and the energy consumer. And, finally, it is no surprise that there are 15 pending lawsuits and that 5 different federal judges have already ordered this shame to stop.*

# Water contamination, October 2008

Five months after Burko signed the operating license for Mauá, in October 2008, Sanepar, a supply company in Paraná, published an article warning of probable compromises in the water supply for 40% of the population of Paraná. In August, Sanepar officially published conclusions, which Fprt (citizens, scientists, indigenous people, environmentalists, small farmers and philanthropic entities) had already known for a long time. In the event of cyanobacterial blooms in the HPP Mauá reservoir, depending on the type of organism, bloom intensity, climate conditions, hydrodynamics of the reservoir and water bodies upstream (up to the reservoir dam) and downstream (after the reservoir), Sanepar's water collections for public supply in Tibagi, Telêmaco Borba and Londrina, which are directly influenced by this ecosystem, may be affected in terms of the presence of algal biomass. An example is the fact that occurred in 2006, in Londrina, where, under severe drought conditions, there was a large proliferation of algae in the water source.

It is noteworthy that the Tibagi river basin has a potential for a very significant diffuse supply of nutrients, due to the development of intense agricultural activities". Sanepar Metropolitan Manager, Sérgio Bahls. In Londrina, the magistrate had been following the Mauá Case very seriously

since the concentrated initiatives of federal prosecutor João Akiromoto, in 2002. Driven by recurring indisciplines in the electricity sector, the legal conflict continued. In October, a new public hearing was held by the Londrina Environmental Prosecutor's Office, chaired by Public Prosecutor Solange Novaes da Silva Vicentin. There, they discussed the risks that the installation of the Mauá Plant would pose to the region's water quality and the unfeasibility of water supply for cities that depend on the Tibagi River, such as Londrina, Mauá, Rolândia, Cambé and Jataizinho. The Public Ministry of Paraná, through the Environmental Prosecutor's Office of Londrina, then forwarded a recommendation to the Environmental Institute of Paraná, the IAP, asking for the suspension of the installation license granted to Consórcio Energético Cruzeiro do Sul, led by Joel Malucelli, for the construction of the Mauá Hydroelectric Plant or the temporary closure of works. In the same month, Federal Judge Antônio César Bochenek, from the 2nd Federal Court of Ponta Grossa, scheduled the first hearing for November 28 to discuss the responses offered by the defendants: Iap, Cnec Engenharia and Ibama.

The author of the action, the Environmental League, requests the annulment of the Preliminary License issued

by Rasca Rodrigues from IAP in December 2005 for the construction of the Plant. Journalist Fernando Jasper from Gazeta do Povo reported in an article that the construction of the Mauá hydroelectric plant, on the Tibagi River, will have to be interrupted. An injunction granted on Tuesday by the Federal Court of Londrina, at the request of the Federal Public Ministry, suspended the installation license for the plant – a document issued by the Environmental Institute of Paraná, which authorized the works last year. Judge Alexei Alves Ribeiro also determined that, within 45 days, Ibama should present an opinion on this license, pointing out any flaws or omissions. Between 2007 and 2008, another injunction prevented the start of works for around eight months, until it was revoked by the Superior Court of Justice, last July. Note from the Legal Coordinator of the Environmental League, Rafael Filippin, was published on blogs on the internet: The new decision shows that disrespect for democratic institutions cannot prevail, regardless of Mauá being a work of the PAC (Growth Acceleration Program). The majority partner of the consortium responsible

for the plant, Copel, stated that it had not been notified, but that, if confirmed, the court order will have the immediate effect of dismissing the 528 workers working at the construction site. According to the state-owned company, the decision could compromise the supply of electricity from 2011 onwards, in addition to preventing investments worth R\$1 billion and the generation of 1,500 direct jobs and 3,000 indirect jobs. Two months later, on January 19, 2009, the Federal Court of Londrina issued a decision suspending the installation of the Mauá plant again.

Federal judge Alexei Alves Ribeiro granted the injunction (Public Civil Action nº 2006.70.01.004036-90) so that Consórcio Energético Cruzeiro do Sul is obliged to immediately suspend any acts carried out based on Installation License 6496/2008. This precautionary measure (No. 2009.70.01.000179-1/Pr), at the request of the Public Prosecutor's Office, has as defendants the consortium, the Union, Ibama and IAP. The organization Meio Ambiente Equilibrado (Mae) from Londrina made compromising recordings of the movement at the construction site: "...we recorded in an incursion into the Palmital community that the movement at the HPP construction site continued - and intensely. The images were taken around noon on Saturday, February 14th." The videos, available on Ong Mae's YouTube, show that even in the face of a decision by federal judge Alexei Ribeiro Alves, from the 1st Federal Court of Londrina, who ordered the suspension of works on the Mauá dam, Copel and

Eletrosul continued the environmental crime. In a petit committee, Requião, Sergio Lamy, president of the Cruzeiro do Sul consortium (Copel and Eletrosul), decide that the work should continue. Disregard for federal determinations was now the modus operandi of the Mauá Case. The works continued at full speed. Century-old trees on the banks of the Tibagi fell in the middle of the 20th century in an extremely shameful way, while Brazil was preparing to debate sustainability at the Copenhagen convention.

President Lula would give a blunt speech, the objective was to give a moral lesson to European countries and highlight the enormous efficiency and sustainable energy alternatives promoted by the Brazilian government. However, the president did not mention that hydroelectric production has become a big business.

# Kaingang territory, April 2009

The concerns of the Kaingang indigenous people were another conflict that the Consórcio Cruzeiro do Sul sought to put aside at any cost. This has been a topic avoided in virtually every commentary in recent years. Copel knew from the first studies it carried out that the Tibagi Basin includes Kaingang territory according to Federal law. The company, which has the mission of continuing to use hydroelectric power in other areas of Tibagi, sought to minimize the impacts on the Kaingang communities as much as possible. Another public civil action by the League was filed, having been widely publicized on blogs including that of Telma Monteiro: *Liga Ambiental, a civil society organization from Paraná, filed a public civil action (ACP) on April 17 before the Subsection of the Federal Court of Curitiba , with the aim of urging Funai and the Federal Union to begin the*

*process of continuous demarcation of the Kaingang indigenous lands of the Tibagi river basin and the Guarani indigenous lands of the Cinzas and Laranjinha river basins. According to Filippin, part of these indigenous lands was recognized as such in the 19th century and legally formalized through state decrees at the beginning of the 20th century.*

*However, in 1949, an agreement signed by the state and federal governments illegally and unconstitutionally reduced the original lands by more than 2/3, transforming them into a set of small discontinuous areas. Kaingang voices from the indigenous land of Mococa spoke through the chiefs and counselors Antônio Artur, Reginaldo Batarse, Salvador Pereira and Pedro Tiburcio: We from the Mococa Indigenous Land, Chief and leaders of this Community, are fighting and saying NO to the construction of Dams on the Tibagi river. We say No, because we don't want to see the Tibagi river ending, or better yet, killing the Tibagi river. The Tibagi River is the source of our traditional food, which is fish, e.g.: Dourado, Pinto, Cacimba, Mandis, Lambari, Piapara, Catfish and Cascudo. For this reason and so that nature is respected, we do not want to see the destruction of the Tibagi River. Therefore, we ask*

*the authorities not to allow the Tibagi River to be destroyed. When the River ends, the fish also ends and our food that we take from the Tibagi River ends. By destroying the Tibagi River, you are also destroying our Community. In the public civil action Filippin is indignant, exclaiming that “The disrespect for the right of the Kaingang communities to effectively participate in the decision regarding the installation or not of HPP Mauá, as recommended by art. 6th of Convention 169 of the ILO (International Labor Organization), is evidence of environmental racism in the electricity sector and will certainly lead the indigenous peoples living in the Tibagi basin to new explosive reactions.*

However, there is nothing to believe that the electricity sector will respect the decision of the Kaingang, as not even the decision of the Tibagi Basin Committee was observed and the process of installing HPP Mauá continues, contrary to the law and the right to effectively participate in the decision-making that organized civil society is entitled to”. The League's action continues to be processed. The areas where the five indigenous reserves are located are precisely the largest forest reserves in the region. Mococa is the area close to the Mauá development. However, the Apucarantina reserve with 6.3 thousand hectares and a population of 400 indigenous people relies on the efforts of the Kaingang population, chief Ivan - graduated in law from the State University of Maringá, the Fprt and the Public Ministry. In excavations in 2008, more than 33 thousand artifacts and fragments were located, proving that the Tibagi basin was a cradle of populations, including the roots of the Kaingangs. The recognition of Indigenous lands

demarcated decades ago is essential for the last Kaingang to be able to subsist in the Tibagi basin.

# The magistrate in favor of Tibagi

A sequence of legal clashes invaded the year 2009. The 16 actions filed by the League, by Anab and by the Public Ministry counted on the efforts of five federal judges sensitive to the pernicious insistence of state and federal governments. The Tibagi dam achieved its success solely due to the government's most powerful political articulations. What happened in the Tibagi basin was a rare event of social mobilization, struggle and union of democratic and legalist forces. Over the years of resistance demanding the multiple use of water, it included the Environmental League – which was always at the forefront of debates and opposition against Mauá – teachers, students, riverside dwellers, fishermen, miners, beekeepers, farmers, civil organizations, mayors, among others. This universe that came to make up the Tibagi River Protection Front (Fprt) began to receive attention from some dissidents from the Public Ministry. There, the Federal Prosecutor in Londrina, João Akiromoto, met among many collaborators Tom Grando and Rafael Filippin, from the League, who provided a large amount of documentation and information that came to form an important action filed by the Public Ministry.

At the same time, other League actions were being processed in conjunction with those proposed by the public ministry. Then a chorus coming from the most varied segments of society began to legitimize the actions of the public ministry. The culture of social mobilization that emerged in the Tibagi basin together with the work of prosecutors and judges had bombastic results. The first instance of the judiciary was fundamental in preventing the Mauá installation process. During ten years, the powerful electricity sector was defeated five times. Three federal judges who decided not to bow down to interference from the Minister of Mines and Energy

and did not give up their democratic stance had issued decisions to block Mauá. (Alexey, Solange, and Bercnech). It was always obvious to the magistrate who decided to oppose Mauá that his actions would confront the interests of rulers. At this point, the parallel actions of the Fprt and the actions of the League created historic results. Mauá also had victories in the second instance. Two federal judges, Vânia Rack de Oliveira and Edigar Liviman said that the Mauá implementation process could not move forward in the way it was being conducted. Vânia was still a second-degree substitute judge.

# Silvia Goraieb and the plight of the forgotten COMMUNITIES

In June 2010, federal judge Silvia Goraieb was honored in a ceremony that included an elegant portrait of the illustrious federal judge in the gallery of presidents of the Federal Court of the 4th Region. The ceremony took place in the presidency's office and highlighted the good work done while he directed the TRF4 in the 2007-2008 biennium. Goraieb has an enviable career with several judge positions since 1980.

According to the text on the Federal Justice portal, after receiving tributes from the court Goraieb expressed his desire for the portrait to reflect gratitude, affection, hope and peace, representing an idea of Justice that he has always cherished in his 30 years on the bench: *I want to be seen as a human being who added something to people's lives, and concluded, that I can continue my path carrying out Justice and promoting the good of humanity.* Afterwards, the president of the Superior

Court of Justice, minister Cesar A. Rocha, who attended the ceremony, also paid tribute to the judge:

*I highlight two great virtues of Silvia Goraieb: her immense willingness to plant harmony and remove discord, contributing to everyone's peaceful coexistence, and her ability to be sensitive to the needs of the most forgotten people.*

*In March 2009, the president of the TRF Silvia Goraieb suspended the injunction that determined the stoppage of works on the Mauá hydroelectric plant, claiming that the problems can be corrected without the need to demobilize hundreds of workers involved in the construction, according to data released by the Federal Court and published in Gazeta do Povo on May 28, 2009: In her decision, the president of the TRF, judge Silvia Goraieb [who authorized the resumption of the works in Mauá in an order], understood that “the maintenance of the measure [interruption of the work] would cause serious damage to the public economy”.*

At that moment, Silvia Goraieb's gaze demonstrated a shallow understanding and little sensitivity towards the needs of the forgotten communities of Tibagi: *the more than*

*three hundred farming families, the indigenous community of Mococa, citizens of Paraná and the demands of the Fprrt. The judge was unable to see the basic elements that govern the Brazilian constitution, in addition to the historical allegations of illegalities present in more than 20 legal actions and recommendations related to the Mauá Case. Even knowing that the conflict lasted for almost a decade.*

At the time, the organization Meio Ambiente Equilibrado, based in Londrina, filed a request for Goraieb to reconsider the arguments against the construction of Mauá. However, this effort proved in vain. Federal Judge Vânia Rack, who dismissed Mauá's case, was removed from office the day after the order by Attorney Silvia Goraieb, who had released the work more than once. In another decision by Goraieb, it was stated in the records: In light of the Union's relevant arguments, I defer. An issue that involves more than a billion reais in investment and the fate of thousands of people, in addition to the dramatic environmental consequences, was decided in a text with just three lines in the order. The judge who replaced Vânia in the TRF4 group made the order one day before

being treated to a pleasant vacation. An orchestrated maneuver from an administrative point of view within the TRF, where Mauá's process had been surgically delivered at the precise moment to the chosen person. With their strong ally in the TRF, Requião and Rubens Ghilardi, from Copel, had less to worry about in the face of complaints from the Tibagi Protection Front, and mainly from the League, the important NGO within the Fprt. Once again the consortium launches media advertisements proclaiming another step that leaves those who oppose progress behind.

Even carrying out the work with a flood of illegalities, Copel and the construction company J. Malucelli needed more support and consent from more powerful actors in the judiciary. Sérgio Lamy, director of the consortium, knew that the need for new maneuvers could not be ignored. One month after Goraieb's decision, a bombastic event became public and was widely announced in the media: the Mauá Case was back.

# The deep sleep

The Legislative Assembly of Paraná seemed to have woken up from a deep sleep and decided to speak out against the Mauá dam. This occurred three years after that event in the plenary of the assembly, which included the efforts of deputy Tadeu Veneri and the presence of Hélio Meca, who sought to draw the attention of the other representatives of the population, the deputies. While the legislative assembly moved at a slow pace and was submissive to the actions of governor Requião, the works at the plant had already caused dramatic damage to the forests on the banks of the Tibagi. Even after years of delay, Fprr's demands were finally prospering. They came from a lobby by deputy Veneri. The vote on the opinion that denounced the unconstitutionality of the dam was held in the Legislative Assembly of Paraná in October 2009 and there it was decided by seven votes against three, that Mauá should be interrupted and that the work violated article 109 of the constitution of the State of Paraná. Paraná. According to a publication in *Jornal de Londrina* seven months earlier, deputy Ademar Traiano stated that *the construction of thermoelectric and hydroelectric plants will depend on a technical project with environmental impact and approval by the Legislative Assembly.*

*The work was started in violation of the law and we cannot allow this House to be disrespected by the state government.*

*Monitoring the vote were representatives of the Public Ministry, representatives of the League, Tom Grando and Filippin, as well as Ismair, the beekeeper. It was another of the tireless trips that Ismair made by motorbike from Telêmaco to*

Curitiba. This time Ismair brought with him a sample of contaminated water from Tibagi, from an area close to the mines, and another contamination report, with the aim of once again alerting deputies and the media, who were following the event. That same day, after the vote by the Constitution and Justice Committee of the Assembly, a request for representation presented by deputy Ademar Traiano and approved by all deputies was forwarded to the Federal Public Ministry of Londrina to suspend the construction of the Mauá plant. The commendable effort of deputy Ademar Traiano gave rise to yet another theatrical performance by deputies whose real interests were political agreements and power games. The assembly in the state of Paraná showed its opportunistic personality, recycling demands almost a decade late. The deputies knew about the Mauá Case for a long time, informed by the League, Mab, universities, Sister Rosa among other sources. But now with the work in progress it would be a time to use Mauá as a decoy for political arrangements with the Requião government. The Constitution and Justice Commission's action did not have practical effects in preventing the construction of the Mauá plant, as was expected.

Minutes after the vote, prosecutor Robertson Fonseca accompanied by Tom Grando, Rafael Filippin, Ismair left the assembly and headed to the State Court of Auditors, passing on foot in front of the Government Palace, and crossing the heart of the Civic Center of Curitiba . There, in a meeting with the president of the TCE, Robertson explained details of the immoralities of the Mauá dam. The League's legal coordinator, Filippin, warned the president that the League had sent a representation to the TCE in 2007, due to damage to public coffers. The representation, however, was embalmed and dusty in the court archives, which are two floors below the president's office. The president listened seriously and attentively to Rogério and Filippin and promised to pay attention to the representation. Weeks later, the TCE proudly announced on its website the proven collection of R\$ 1,454,000.00 to public coffers, in the 2009 financial year. Only the League's representation would make it possible to collect at least R\$ 5,000,000, 00 million unduly paid by Consórcio Cruzeiro do Sul to the Camargo Correa company for preparing the adulterated documents. Ismair would face a long journey back to Telemachus, 350 kilometers, the next day a lot of work awaited him: collecting ordered quantity of his purest organic honey, whose final destination would be Japan. Tom and Filippin left the assembly and continued walking towards the center . Tom had planned some Laser activity with his son in his diary, and that day also had a long night of work in store for him.

Rafael Filippin returned to the college where he teaches, the lawyer had classes to prepare for students in night classes. Prosecutor Robertson got on his inseparable bicycle and headed towards the prosecutor's office. Television and newspapers frantically announced to the thousands of readers and viewers who were able to follow passively, and without understanding very well, the troubled day at the assembly. Soon the dust would settle again and economic journalists would be celebrating the great advantages for economic development provided by Mauá. The director of the consortium, Sergio Lamy, starts to tell the media that R\$ 120,000,000.00 is planned to fund the implementation of the 34

programs foreseen in the project's Basic Environmental Project. The financial participation for the two municipalities will be in the order of 3.5 million monthly, in addition to a significant increase in Icms collection, guarantees Lamy. The president of Copel Rubens Ghilardi says that the construction of Mauá is considered of fundamental importance: *We have an urgent commitment to the country to make the electricity produced in the new plant available to consumers from 2011.* With a different text from those of the representative of consortium, Filippin commented on Fabio Campana's blog, on November 5, 2010:

*Mauá is the synthesis of the incompetence of this government and the electricity sector in respecting the rights of citizens, while spending (and how) public money. By the way, yesterday's news from Telêmaco Borba: the consortium is not paying the compensation owed to the riverside residents (they sent word that Eletrosul is out of money...) and the cofferdams and other works on the construction site collapsed due to the heavy rains. And the tunnel that the governor opened? It can't handle the flow... A shame.(...).*

*Federal Government and State Government managed to move the work forward with exceptional acts and political maneuvers. The non-existence of Mauá does not put the country's economy at risk, according to energy and environmental experts. The only threat concerns the interests of the government on duty.*

# The Secret Diaries of the Legislative Assembly

A few months after the event in the Legislative Assembly, in March 2010, it became evident that the vote that raised an obligation for the assembly to stop Mauá, in reality, served as a strategy to negotiate internal interests in one of the most corrupt environments in the country, which would be unmasked by one of the most revealing reports in Paraná journalism. Reporter Katia Brembatti brought to the public evidence that the Legislative Assembly of Paraná is nothing more than an autarchy with multiple bankruptcies. And it was in this lake of corruption that Mauá was far from being a priority. Issues of embezzlement of public money and ghost positions became the focus in the decadent institution of the Paraná government. That decision to block Mauá did

not succeed. The State of Paraná was adrift, illegality was the word of the hour. The article that received national recognition continues to be highlighted in the newspaper Gazeta do Povo, and was titled *The Secret Diaries of the Legislative Assembly*. Corrupt officials were unmasked and high-ranking positions shamefully exposed.

The fight to stop Mauá was once again frustrated. The League's expectations were definitely outside the institution that should ensure the integrity and transparency of Paraná's infrastructure programs. Corruption and schemes emerge from wells deeper than the Legislative Assembly of Paraná.

# The owners of energy

The Electrical Sector acquired Dantesque proportions. Spending on works carried out with public resources reaches billions of reais. Where there are billions, there is also corruption. Control of this cluster of authorities, public and private companies has become fundamental for the dominant political groups in the country. It is the promising path to power and money. The positions of presidency and directorship of the Ministry of Mines and Energy and Eletrobrás, for example, are strategic appointments that currently alternate between the energy owners: a scheme headed by the president of the Federal Senate, José Sarney, and the allies of the Labor Party, led by Dilma Rousseff. Appointments for leadership, directorship and presidency positions are designated by secret decisions in order to balance the forces of these feudal groups. In 2003, Dilma took over the Ministry of Mines and Energy. The minister, the president's right-hand man, goes on a pilgrimage through Brazilian states demanding political promises and openness to carrying out the works of the federal government's Economic Growth Plan (PAC).

From there, agreements are signed with state governors for the Belo Monte plants in Pará, Jirau and Mauá in Paraná, among others. In 2005, Dilma was reassigned to the Civil House. This time, Sarney's loyal squire, Silas Rondeau, was appointed to the ministry, who came from the presidency of Eletrobrás and previously of Eletronorte, both appointments from his political godfather Sarney. Márcio Zimmermann, linked to Minister Dilma Rousseff, becomes Executive Secretary of Eletrobrás and had to be endorsed by José Sarney. Two years later, Rondeau was removed from the ministry due to serious accusations of influence peddling made by the Federal Police. The politician had been investigated for some time.

In 2010 Rondeau was caught again by the Federal Police's Sand Castle operation. The politician had received R\$ 300,000.00 diverted from the budget for the implementation of locks at the Tucuruí plant, in Pará. The total diverted from this PAC work amounted to 2.9 million which would be divided between Sarney's group and the Labor Party. Sarney's son, Fernando Sarney, a businessman with great influence in the electrical sector and owner of radios, newspapers and TVs in Maranhão, and the financial director of Eletrobrás, Astrogildo Quental, appointed to the position by Fernando himself, were also denounced. The bribe is equivalent to 3% of the value of the work of R\$97 million and was transferred by the contractor Camargo Correia. In 2008, Edison Lobão, an ally of Sarney, took over the ministry. Another authoritarian politician from the Maranhão oligarchy. In 2010, Sarney's sponsor, Lobão, left and Dilma's follower Márcio Zimmermann entered the Ministry of Mines and Energy.

Valter Luiz Cardeal de Souza joined Eletrobrás in 2006, accused of forming a gang, fraudulent management and misappropriation of resources in three different incidents. He was accused of the Federal Police's razor operation. In the market, he is considered a trusted man of former minister Dilma Rousseff (Casa Civil). Eletrobrás hired a law firm for one million, without bidding, although it has its own legal team to defend Cardeal against the accusations. In 2008, José Antonio Muniz Lopes, a consensus name between José Sarney, Jader Barbalho and Edison Lobão, took over the Ministry of Mines and Energy. While this complex influence peddling prospered, Edison Lobão spread threats in the media such as the replacement of hydroelectric plants by thermoelectric plants – extremely impactful – if the environmental licensing process delayed the construction schedule of the hydroelectric plants. In 2011, former minister Dilma Rousseff was elected president of Brazil, which kept Lobão in the position of minister. To strengthen political alliances, Zimmermann took on the position of executive secretary of the Ministry of Energy Mines alongside Lobão. As journalist Ricardo Setti reported in February 2011, *the president would have agreed with minister Edison Lobão – Sarney's old errand boy – at least one major change: at Eletrobrás, electrical engineer José Antônio Muniz Lopes Filho, former president, would leave Chesf and*

*Eletronorte, and another engineer would join, Flávio Decat, former director of Eletrobrás itself and other state-owned companies in the sector, now working in the private sector.*

The conspiracy installed in the bowels of the electricity sector for more than two decades, consolidated by Sarney, was, unfortunately, the left's main financing instrument. Now, how does the circulation of loans for these major works work?

# 2011 – The x-ray of the electricity sector and Mauá

The electrical sector, contractors, and engineering companies specialized in works and maintenance of hydroelectric plants are capitalized with a large inflow of money from financing mainly from BNDs, destined for hundreds of works in progress throughout Brazil. The occupation fronts are now heading towards the center-west, in the upper Paraguay basin and in the north towards the Amazon, mainly where the population is not enlightened enough to supervise such undertakings. The Bnds, which continues to be criticized even abroad, threw 50 billion reais into the hands of medium and large corporations in 2010. An example is the emerging company from Paraná, Intertechne Consultoria S.A, based in Curitiba, and present in a large part of engineering projects for

hydroelectric plants in the country, including in Mauá. The company had revenues of close to 85 million reais in 2009, and for 2011 it expects growth of more than 20%. According to journalist Fernando Jasper, Intertechne is present in the five main plants under construction or about to be built in the country.

*She is the lead designer of Belo Monte, Teles Pires (1,820 MW, on the border between Mato Grosso and Pará) and Estreito (1,087 MW, between Tocantins and Maranhão). On the Madeira River, in Rondônia, the company is part of the consortium of designers in Santo Antônio (3,150 MW) and operates in the management of reservoir works in Jirau (3,300 MW). Additionally, it works on the Mauá projects (361 MW), in Paraná; Garibaldi (178 MW), in Santa Catarina; and São Domingos (48 MW), in Mato Grosso do Sul. Likewise, other providers of the most varied services, from the construction and maintenance of dams to the construction of transmission towers, also aim for growth and record profits. However, the formula adopted to maintain this balance continues to be that of developmentalism, in an economic environment of income concentration, the allocation of profits*

*abroad through multinationals and the plundering of natural resources. The cruel strategy of imposing more hydroelectric works until there are no more living rivers goes against natural laws. It is only possible due to the 20th century economy, of scarcity and oppression, where the myth of development encourages policies of infinite economic growth in a world of finite natural resources. What could be more absurd? In addition to construction companies, segments such as agribusiness see great possibilities for profit. With the dams in the Madeira complex (Santo Antônio and Jirau), for example, the emergence of waterways would reduce the cost of exporting soy, making it more competitive on the foreign market.*

Turbine technology companies such as Siemens (Germany), Alstom (France) and General Electric (USA) form another powerful interest group. Votorantim, Odebrecht, Camargo Corrêa, Andrade Gutierrez and Queiroz Galvão are powerful corporations that benefit from the sale of cement, iron and other raw materials. This vicious cycle will last as long as such ventures are subsidized by Brazilians and with profits guaranteed by the government. The monetary equation adopted by the electricity sector means that the profits obtained from the construction of dams are, in many cases, more important than the energy generation itself. Because such works are supported by copious loans from the federal government, in addition to the guarantee for the purchase of energy, negotiated at the Electric Energy Chamber of Commerce. Capitalized groups are seeking this type of investment with low economic risk. Thus,

another type of enterprise in the electrical sector is spreading chaotically across the country, Small Hydroelectric Plants. Many investors are unaware of the negative impacts of such projects in the way they are being sponsored by the National Social Development Bank, BndS. The insanity inherent to the developmental ideal is such that even in the few pristine areas of the Atlantic Forest of Paraná, unique regions, with extreme biological and geological value, world heritage sites and protected by the Atlantic Forest law, investors are requesting opinions for the construction of PCHs .

Fortunately, a few consultancies have sought to guide entrepreneurs on the profound impacts that such works can have, thus managing to save wildlife sanctuaries. In the case of large dams, what continues to prevail is a more powerful electrical sector, full of vices and dictatorial policies, where profit has become the primary objective. Copel recorded a net profit of R\$384.80 million in the first quarter of 2011, a result 20.5% higher than the R\$319.3 million recorded in the first three months of last year. She also benefited from electricity bill adjustments of 2.46% authorized by the National Electric Energy Agency, in addition to removing discounts for bills paid on time. According to Copel's financial director, Ricardo Portugal Alves, *the company's goal is to grow in energy generation and transmission. The energy sector is growing in the center-west and north of Brazil. The company will analyze these projects and if they have an interesting return, we intend to participate in these projects.* Portugal makes it very clear that today's Copel is a corporation with a globalized agenda with an eye on the stock exchange and big businesses. The greater the number of dams built and the higher the tariff, the greater the profit. From a sustainability perspective, the strategy should respond to the search for projects that respect Brazil's constitution and value modern, socially responsible technologies that protect what remains of preserved green areas and clean rivers. By the way, the North that Portugal refers to is occupied by the Amazon rainforest. And as for Copel's investments in wind farms or solar energy, they are still timid or non-existent.

Therefore, from Copel's perspective, the optimal use of the hydroelectric potential in Tibagi becomes an irresistible pot of honey. The Energy Research Company, a public company linked to the Ministry of Mines and Energy, launched a bidding notice in 2010 to hire a new review of the inventory studies of hydroelectric plants on this river. This review should include those hydroelectric projects already mentioned previously: Santa Branca, Tibagi, Telêmaco Borba, Cebolão and Jataizinho. It should be noted that the São Jerônimo and Mauá projects are excluded, which must be considered with fixed axes. The Hydroelectric Inventory Studies of the Tibagi River Basin were also carried out by Cnec. However, the reports say nothing about the socio-environmental drama of the last forests in Paraná. Far from the pages full of tables, numbers, turbine models and budgets ranging from millions to billions, there is another story. Energy tariffs do not include externalities generated by dams. The megawatt/hour does not include mass extinctions, fragmentation of natural habitats, emergence of diseases, changes in the water cycle, oppression of indigenous communities

and social exclusion. Ultimately, the services provided by nature free of charge that allow our survival on planet Earth are being subtracted and transformed into serious socio-environmental liabilities, which will be passed on to future generations. Therefore, hydroelectricity is only viable due to the economy of scarcity and profit.

In April 2011, centuries-old trees fell at the construction site in an uncontrolled manner and disregarding forestry procedures for removing vegetation cover and technical recommendations, as shown in the report by Alba Lúcia Cavalheiro, a professional from the biodiversity and Ecosystem Restoration laboratory at University of Londrina, authorized by the Environmental Institute to monitor the cutting and supposed removal of commercial or rare species: The most serious thing that happened, and which, in fact, they weren't even hiding, is the story of burying (and, later, submerging) part of the biomass. According to the consortium team that accompanied us, it was a recommendation

from Iap. But we believe that, in addition to the little that was supposedly recommended by the Iap, much more biomass is being buried, a little would not be good. In fact, it seems like they are burying everything that is not commercial. All in all, a grotesque scene. We are used to seeing the landscape already devastated and occupied with cities, pastures and agriculture; but we hadn't seen the devastation happening! Who needs an earthquake and tsunami? When you see the images, you will really understand what I am saying. It's all very fast. In a matter of minutes, several trees come crashing down. I have seen many seeds germinating, many trees being born; I deal with this in my daily life. I never imagined that one day I would witness several of them falling, or rather, being toppled. It's different to hear about it. It's unlike anything that can be said or seen in a film, recorded anywhere. It's here and it's real.

The week before Alba's visit, Tom Grando was on the banks of Tibagi, on the opposite side of the deforestation area, to monitor the process of eviction of riverside communities, and in particular the case of

Ismael. From there it was possible to see from a distance that there was something wrong on the other side of the river, in the deforested area. The sawn trunks of species such as araucaria, perobas, cedars, among hundreds of others, were simply lying in a disorderly and chaotic manner. In order to seek some clarification, Tom went to the construction site on the Ortigueira side, a few kilometers from Ismael's property. What he found at the site were precarious facilities for a project of this size and without anyone who could intervene in the possible entry of a stranger or even provide information. The worrying suspicions were later confirmed by Grando: the procedure for removing plant and animal species was being carried out incorrectly. In fact, it is shocking how Mauá shows illegality at all imaginary levels, from simple and commonplace procedures to the most serious administrative interventions. In addition to issues of great institutional impact, other side effects were reported. Regrettable situations were exposed by residents of the region who claim to have seen animals such as deer, armadillos and peccaries being slaughtered and consumed by construction workers on

weekends. Carelessness is everywhere, in all hierarchical spheres, from workers to technicians.

The company that deals with billions of reais from public coffers, with human lives and with the scarce biodiversity that still exists in Paraná proudly highlights its commitments and concerns with sustainability on its website: Copel has defined as a priority the implementation of business management oriented towards sustainability, whose model seeks to align efforts to achieve and guarantee, based on the Company's values and optimized process management, results in the economic, social and environmental axes, in a balanced way for interested parties, as well as development and the Company's sustainable growth, with a view to adapting to international standards of governance, transparency and sustainability, in accordance with the renewed commitment to the United Nations Global Compact - UN, of which Copel has been a signatory since 2000. Copel.

The policy of *optimal use*, that is, maximum hydroelectric use, continues to be the preponderant model in the electricity sector, the same one from the 90s, in which the most basic legal elements are simply dispensed with. Mauá is the x-ray of the capitalist and reckless energy policy of the 21st century. Today Brazil has learned to transform energy into elite business and political currency, hidden under the discourse of clean energy and economic development.

The term *renewable and clean energy* is specified in the Clean Development Mechanisms (LED) guidelines of the Kyoto protocol for reducing CO<sub>2</sub> emissions. In this sense, the term clean has no direct relationship with the maintenance of biodiversity, water resources, forests or respect for social rights. Even though life indirectly depends on the socio-environmental context, the Kyoto Protocol only concerns CO<sub>2</sub>

emissions. The protocol also leaves out methane emissions caused by the rotting of organic matter in the depths of the reservoirs. The protocol also leaves out compensated owners who perhaps acquire land further north and deforest the forest there, indirectly generating large CO<sub>2</sub> emissions. Or like the logic of Mauá, where millions of tons of carbon stored in living plant matter, such as trunks and leaves were simply sacrificed and now have an uncertain fate, one of which could be the atmosphere, in other words the *carbon offset leakage*. According to the United Nations Environment Program (UNEP), hydroelectricity is considered sustainable energy. The prerogatives presented by international documents and bodies support speeches such as that of President Lula in Copenhagen 2010, which presented the Brazilian energy matrix as of unquestionable quality, advantageous to the environment and society. Such concepts keep away from the serious externalities and socio-environmental impacts caused by hydroelectric plants.

Labeling hydroelectricity as clean energy made a good impression on public opinion for

many years. This biased marketing still occupies the pages of the country's main newspapers and magazines. This million-dollar advertising investment has the sole objective of maintaining control over public opinion. Hydroelectricity received a misleading type of safe conduct that exempted this segment from responsibility for severe socio-environmental impacts committed. In fact, hydroelectricity is a low-carbon energy when compared to thermoelectric plants, for example. But there is one point to be highlighted:

The energy matrix corresponds to all sources of electrical energy and energy from fuels, that is, energy destined for industries, homes, offices, shopping malls, public services and transport. In Brazil, more than half of all this demand comes from non-renewable sources: oil, natural gas, coal and uranium. These sources accounted for 56% of all energy consumed in 2006, while in the same period hydroelectricity accounted for just 15% and biomass for 29%.

Matriz Energética – eletricidade e combustíveis			
Participação (1)			
Energia renovável			
Energia não renovável			
Energia hidráulica e mini turbinas de contrapressão			
Bagaço vegetal = 14%			
Alcool			
Carvão = 18%			
Energia eólica			
Energia solar (fotovoltaica)			
Relevante de água			

(painel solar)				
Ratificação				
66,08% em 2014				
Não renovável				
Não renovável				
Não renovável				
Não renovável				

\*\* The burning steam is used in counterpressure turbines in extraction equipment (63%) and in electricity generation (37%) (1) Energy Research Company (EPE), of the Ministry of Mines and Energy/2007 (2 ) Roberto Kishinami – physicist specializing in Energy Planning and the Environment / source: Almanaque Brasil socioambiental (3) UN/ UNEP – Global Trends 2008

Therefore, hydroelectricity accounted for 14.9% of the country's entire energy base and 75% of production of electrical energy in 2010. Therefore, there is no reason to believe that the collaboration of hydroelectricity will sustainably meet the demands of the century, without there being an ecological collapse, especially in the Amazon.

# 2011 – Latest events

We are in June, with the events of the last two months involving more irregularities that reveal Copel's inexhaustible efforts to dodge the allegations. We are narrating the latest events in the moving story of the Tibagi, a remarkable river left in the hands of energy grabbing. In the coming weeks, months and years, the Copel case will likely continue to be under investigation, much of which we are still unaware of. In May of this year, another bombastic article by journalist Katia Brembatti entitled Mauá puts the forest down until August brings once again to the headlines of newspapers and social networks the realities of deforestation in the megabiodiversity area of Tibagi. The report is illustrated by a half-page photo showing the virgin forest in the background, an extensive deforested area and in the foreground thousands of stacked noble wood trunks, reminiscent of those photos from the 1950s, at the time of major deforestation in the region. South and Southeast. The fourth largest continuous strip of native forest in Paraná is falling to the ground, this time with official authorization. Smaller in size only when compared to the stretches of Serra do Mar, the Iguaçu National Park and the Mangueirinha indigenous reserve, the green patch that borders the Tibagi River is being felled to make way for the reservoir of the Mauá hydroelectric plant, between Telêmaco Borba and Ortigueira.

A thousand people have been working since January to remove araucaria, perobas and century-old cinnamon trees. Katia Brembatti. Important data are presented in the journalist's texts, such as the percentage of 632 hectares already deforested out of a total of three thousand; the thin branches will be collected and burned in boilers to make

charcoal; the cut wood will be auctioned and the profit should go to the Copel and Eletrosul consortium coffers; R\$39 million will be spent to bring the forest down. While the director of the Environmental Institute of Paraná, Luiz Tarcísio Mossato Pinto argues that the plant is a public utility project. The coordinator of the NGO Liga Ambiental, biologist Tom Grando, explains: *the Tibagi bank area is the only transition section between the Araucaria and Perobas forests, a combination that will no longer exist.* It was a type of forest composition that was not protected by any type of park or conservation unit. Grando explains that the conservation of continuous areas is essential for large mammals, such as pumas and jaguars, which need long stretches of land to survive, in addition to being a guarantee of genetic diversity. Kátia concludes in the article an alarming fact: Paraná should appear in 2011 as the record holder in deforestation of remaining areas of the Atlantic Forest. In 2010, the state was in second place among the largest deforesters in the Atlantic Forest.

In 2012, according to SOS Mata Atlântica, Paraná once again starred as the biggest deforester in the Atlantic Forest. Deforesting 10 times more than second place, Minas Gerais.

# The politics of fait accompli

The Environmental Institute of Paraná, which a few months ago had authorized the consortium between Copel and Eletrosul to cut down the forest along the Tibagi, was shamefully questioned and charged with orders from the Federal Public Ministry. The Federal Public Ministry issued the request to suspend this authorization on December 17, 2010, pointing out the need to define in advance the environmental compensation provided for in Law No. 11,428, known as the Atlantic Forest Law. Important resource to protect this endangered forest, reduced to 7% of its original area. Even though it is dilapidated, its importance is vital for climate regulation in the region where 70% of the Brazilian population lives. Below are articles 11, 12 and 17 of the Atlantic Forest Law. Art. 11. The cutting and suppression of primary vegetation or in the advanced and medium

stages of regeneration of the Atlantic Forest Biome are prohibited when: c) forming corridors between remnants of primary or secondary vegetation in an advanced stage of regeneration;

*Art. 12. New developments that involve the cutting or suppression of vegetation in the Atlantic Forest Biome must preferably be implemented in areas that have already been substantially altered or degraded. Art. 17. The cutting or suppression of primary or secondary vegetation in the medium or advanced stages of regeneration of the Atlantic Forest Biome, authorized by this Law, is subject to environmental compensation, in the form of the allocation of an area equivalent to the extent of the deforested area, with the same ecological characteristics, in the same river basin, whenever possible in the same micro river basin, and, in the cases provided for in arts. 30 and 31, both of this Law, in areas located in the same Municipality or metropolitan region. (Atlantic Forest Law - Law No. 11,428, of December 22, 2006)*

It is well known to experts that in the Tibagi river basin there is no preserved area with ecological characteristics and dimensions similar to the area occupied by the consortium. But at this stage there is little that

can be done to reverse the progress of the work. Here is the final point in the electricity sector strategy. The forest was cut down and the construction site set up. This occupation strategy is a cunning formula developed in recent decades to put an end to dam projects from Arroio Chuí to Monte Caburaí. The well-known policy of *fait accompli* is about pushing unconstitutional projects from the invasion of private areas until the start of construction. From then on it's a matter of time. It is hoped that further clearances from the political leadership will validate the continuity of the works that will be built between legal negotiations and political releases. While the deception of social and environmental compensations is postponed *ad infinitum*. To achieve this outcome, the consortium hired lawyer Édis Milaré.

## **AFTER 2011**

The fate of Ismair, the riverside communities and the kaingangs remained uncertain until the end of 2010. During 2011, the perseverance of the Public Ministry and the presence of the League put pressure on the consortium to speed up compensation for some of the riverside people like Kiko and Ismair. Farmer Kiko, from the community of Saltinho, was settled on another property close to the village where he lives. Ismair, on the other hand, moved to the north of Paraná, in an area where he can continue his activity as an organic beekeeper. It was also agreed that the

consortium will be responsible for transporting the 320 boxes of bees to the new family property. Cases like that of Ismael, Kiko and many others were partially solved by the dedication of the Public Prosecutor's Office and the selflessness of the League's members. In addition to Kiko and Ismael, the consortium will have to deal with hundreds of owners and their demands. The integrity of the centuries-old trees that survived, in that region, the massive occupation of the state of Paraná, will finally succumb under the waters of the future Mauá reservoir. Toxic mines are liabilities that have not yet been resolved by the consortium. The state company Lactec, hired by the consortium to prepare a report on the quality of the reservoir's water, did not even report such dangers.

The hundreds of formal questions present in the actions, representations and motions sent by the Fprt remain unanswered by the defendants: Cnec, Copel, Consórcio Cruzeiro do Sul, Iap, Ibama, Ministry of the Environment, Funai, Bndf, Ministry of Mines and Energy, Agency National Electricity Authority, Energy Research Company, Court of Auditors of the State of Paraná, Court of Auditors of the Union, among others. Dilma Rousseff jumped from the ministry to the Alvorada Palace. The former governor of Paraná Roberto Requião was elected senator, Rasca Rodrigues became deputy. Edison Lobão, Silas Roundeau remained spokespersons for the energy owners at the federal level, and continued to be the central target of the Federal Police's Faktor operation. The director of Mineropar, Eduardo Salamuni, who expressed great concern through the important authority in the first years of the Mauá clash, did not comment further on the project. The body has been working together with the Iap on the release of licenses for small hydroelectric plants. The Iap board continued with the policy of the Requião government that stated: *At the time, Paraná had around 140 projects for the construction of Small Hydroelectric Plants (PCH – Small Hydroelectric Plants). Projects, which had been stagnant since 2003, got off the ground. The Environmental Institute of Paraná, IAP, announced that it will resume the protocols for releasing environmental licenses for the implementation of these plants, as reported on Portal Fator Brasil.*

The former director of the Cheida Environment Secretariat, assumed the position of state deputy, launched the book *Animals, plants and their relatives* at an international event in Bologna, Italy, as announced on his website. There is also a link to the O Globo Agency article entitled *It is possible to build hydroelectric plants in a sustainable way*, argues the president of EPE. The deputy was the author of the 2008 bill seeking the listing of the Tibagi River as Historical, Cultural and Environmental Heritage. The governor of Paraná Beto Richa and the chief minister of the Civil House of Paraná, Gleisi Hoffmann, from the Workers' Party, are strong allies of the development sector and see projects such as Mauá, São Jerônimo and the mega-dam project near the Iguaçu Falls as an opportunity business for the state-owned Copel.

*Copel also wants to define within this period a sustainable way of participating in the construction of the Baixo Iguaçu Plant, with 350 megawatts, whose concession was won at auction by a consortium led by the company Neoenergia [a group formed by the Banco do Brasil pension fund, the Spanish Iberdrola and Banco do Brasil].*

*In February, the company received authorization from Governor Beto Richa to initiate and forward understandings with the consortium with a view to participating in the venture. In a conference call with financial market analysts, held this Friday (13), Copel informed that it intends to be in a position to start construction work on the São Jerônimo Plant, a hydroelectric plant with a projected power of 331 megawatts on the Tibagi River, in 2011. close to where the Mauá Plant is being built, in the central-north region of Paraná. Paraná News Agency 13.05.2011*

With Lawyer Edis Milaré taking care of Mauá's legal disputes, the company Copel is free to dedicate itself to the São Jerônimo and Baixo Iguaçu dam projects, two other projects that have followed the same model applied in Mauá for eight years. Fortunately, the League managed to intercede and interrupt such works through the Curitiba Finance Court, suspending that ordinance 070 of 2005 articulated by the then minister Dilma Rousseff and the former governor Requião.

*1st Finance Court of Curitiba publishes decision in which, in response to a request from the NGO Liga Ambiental, it suspends the effects of Ordinance 070/2005, prohibits the IAP from issuing an environmental license based on this ordinance and suspends the licensing of four plants, among they are in Baixo Iguaçu. In other words, despite the TRF4's favorable decision, the Finance Court's ruling still prevents the IAP from granting licenses to the hydroelectric plant. Fernando Jasper 14.07.2012*

However, in 2011 President Dilma Rousseff prepared a package of decrees to simplify the authorization of works, which should generate new clashes between large corporations and organized civil society. The Regional Council of Engineering, Architecture and Agronomy of Paraná (Crea-PR), which had made a careful statement through director Rossafa and advisors, in 2001, categorically opposing the Mauá project, radically changed its position in Álvaro's management Cabrini Junior, who stated:

*There are cases where the license lingers for years with environmental agencies and, when it comes out, the project is no longer economically viable. This delays the country's development. It was about time [flexibility]. Cabrini criticizes the demands made by environmental agencies, which take time and are costly for companies, and insists: There is no scientific argument that justifies so much bureaucracy. Cabrini's shallow and developmental thinking is manifested in other municipalities, a costly setback for Paraná, which continues to plunder its last forest reserves and compromise the environmental services provided by the rivers. What operates the system ends up being opinions and ramblings of bureaucrats, riddled with scientific ignorance. On November 17, 2011, the Legislative Assembly of Paraná published Rasca's words on the transparency portal: State deputy Luiz Eduardo Cheida*

*(PMDB) asked for the floor and came out in defense of deputy Rasca. "I know his honesty and I know that he acted technically and ethically in this process", highlighted Cheida. On the transparency portal of the Legislative Assembly of Paraná, Rasca emphasizes that Mauá was an example for Brazil.*

*Former director of the Environmental Institute of Paraná, Deputy Rasca Rodrigues was convicted by the Federal Judge of the 1st Federal Court of Londrina, Roberto Lima Santos, for irregularities in the license for the construction of the Mauá Plant. ...The Judge considered that Rasca was prevented from releasing the Environmental Impact Study and Reports (Eia/Rima) for the project because he was part of Copel's board of directors. ...*

*The communities live in the Tibagi River Basin, considered the second most important basin in the state, with a total area corresponding to 13% of the territory of Paraná. The federal judge declared that the basin is Kaingang and Guaraní territory and that this must be considered in future environmental impact studies. (Paraná On-line, Elizabete Castro, 10/14/2011)*

*The dam wall measuring 700 meters from one bank to the other is being raised. The most optimistic environmental predictions are catastrophic. Despite the disastrous future that beckons for*

Tibagi, the Environmental League, represented by Tom Grando and Rafael Filippin, achieved a rare feat in the history of Brazil: preventing for sixteen years the drag of the electricity sector in building the staircase of large dams in this river basin . The participation of prosecutor João Akiomoto, through the Public Ministry, was relevant in the legal sphere. Joining this effort are professors Sirlei Bennemann and Kimiye Tomasino, Sister Rosa, prosecutor Dr. Robertson, Ismair - the spokesperson for riverside dwellers - and Kaingang Ivã, among others. Without these achievements, the Tibagi would be an entirely imprisoned river in 2010. Requião, directors of Copel, political positions infiltrated in environmental agencies were faced with a cell of politicized Paraná citizens who, using the constitution, resist corruption and government excesses. The attitudes of such individuals and institutions in the Tibagi basin have always been based on the search for social and environmental justice, exposing those who are anchored in illegality.

The League continues to pressure the consortium so that the socio-environmental compensations officially planned and publicly presented by Copel and Eletrosul are implemented. The Public Ministry's efforts also resulted in the creation of a commission with the aim of monitoring the programs and demands of the affected communities, as well as some environmental compensations. This commission, entitled the Mauá Study Group (Gem), is made up of the Public Ministry represented by prosecutor Dr. Akiomoto and prosecutor Dr. Robertson, some members of the Tibagi Protection Front such as the Movement of People Affected by Dams, the Ong Mae, for the Kaingang Community, composing the social and environmental representations. The Cruzeiro do Sul consortium also makes up Gem. The consortium's representative, Sérgio Lamy, on the other hand, seeks to negotiate the interests of the venture. As environmental and social compensation remains in the background, delaying demands such as compensation actions ends up being the rule. Copel's environmental department is also part of Gem, which, although sensitive, has little decision-making power for obvious reasons. Iap, Ibama and Funai are also part of Gem, however they continue with their policies of omission, and frequently fail to attend meetings in Telêmaco Borba. Meetings take place monthly

and decisions are deliberative, that is, organized civil society has the right to veto negotiations on socio-environmental compensation proposals.

This is a serious achievement for the Fprt, but it continues to be fraught with the vices of entrepreneurial institutions, which has brought new friction. The Environmental League observes Gem's decisions from the outside. The League participates in Gem's public meetings in parallel, providing technical support to the Public Ministry and society representatives. Filippin explains that the League has three missions at the moment:

*“The first is to save as many people as possible, there are a lot of people being left aside, a lot of situations that need to be repaired and compensation for the real damage. The second mission is to ensure that the work has as little impact as possible. We have to insist that the consortium adopts more and better measures to mitigate impacts on fish, on the quality of water contaminated by coal mines and demarcation of the Kaingang territory. Finally, we have to hold the people who committed the exceptional acts accountable. (...) Holding Dilma and Requião responsible will be difficult, but those in the second echelon who performed the miracle continued to be accused of the crimes committed. The actions that have Iap, consortium and Cnec staff as defendants continue to be processed and sooner or later they will backfire on these administrators.”*

Federal Prosecutor João Akiromoto and prosecutor Robertson Fonseca de Azevedo have supported the dialogue between the various social movements that make up Gem. One of the demands is to resolve resettlement situations for riverside

residents to ensure that they are adequately compensated. Without the support of justice institutions and non-governmental organizations, these citizens could take years to be coherently compensated and some would not even be compensated.

In October, the Public Ministry determined that Kaingang and Guarani territoriality be considered in future hydroelectric projects in the Tibagi basin. Fprt disaggregated over time. The Environmental League ended its activities in 2018. It is considered a reference in the socio-environmental struggle. Its members argue that without social resistance, Tibagi would today be a sequence of large sterile lakes.

# END

Tom, Rafael and Ismair represent in the history of Tibagi the citizens who decided to protect their environment, their waters, soil, fauna and flora. And that in a way they achieved a surprising achievement, stopping the list of events as catastrophic as Mauá and Tibagi Montante. The fight in Tibagi left deep marks on a legion of environmental defenders, more than that, it sealed a change in social behavior for many citizens who became aware of the real history of the Mauá hydroelectric plant, currently called the Governor Jayme Canet Júnior Hydroelectric Plant. Social movements have made available and disseminated stories like Tibagi's, which were previously inaccessible to the population. The myths planted for years by the electricity sector still occupy space in the mainstream media, but questions against dams have definitely increased in the last decade, mainly due to more promising technologies such as

tidal energy, wind and solar. Technologies such as wind and solar pave the way, in this second decade, for a future that does not reserve space for hydroelectric projects.

The modernizations coming from industrialized countries will inexorably rewrite the history of energy in the 21st century in the coming decades. Dam builders continue to look for ways to implement works in Tibagi, rivers in the South, Southeast, Center-West and in the Amazon basin, generally where there are capitalist groups and a scenario conducive to corruption and free rivers to leverage such obsolete projects that end in profits for the economically dominant segments of society, putting the future of biodiversity at risk and compromising future generations. On December 1, 2017, work began on the Tibagi Montante HPP, in the municipality of Tibagi, with a capacity of 36 MW, completed on October 30, 2019. Following the same model and the same questions. The movement in favor of Tibagi, although it did not prevent the construction of the Mauá dam, was essential for the process of social compensation, such as dignified resettlement for those affected by the hydroelectric plant. Unfortunately, the scenario of destruction of natural heritage, caused by the Mauá hydroelectric plant (now called the Governador Jayme Canet Júnior Hydroelectric Plant), cannot be compensated.

### **Expedition through Tibagi 2003**

*“...we arrived at dusk on a small beach isolated by huge trees and divided in half by a gigantic rock, we set up camp and then enjoyed the deepest pleasures that a bath and dinner can provide, a unique reward for those who venture. Night came in that lost corner of Tibagi. There we were able to contemplate one of the rarest natural compositions I had ever witnessed. The full moon was imposing, touching the summit of the majestic Agudo peak, a remnant of a canyon, a relic of past eras. The silhouette of the imposing mountain was reflected in the dense waters of the rapids, in that place shaped on a rocky bed. The dazzling painting that moved before our eyes reminded us of the masters of impressionism, it was one of the most beautiful moments of the expedition”*

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